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## Update on the Implementation of Living Well with Diabetes

To: Hon Dr Jonathan Coleman, Minister of Health

### Purpose

This report updates you on progress in implementing *Living Well with Diabetes: A plan for people at high risk of, or living with, diabetes 2015-2020* (the Diabetes Plan). Progress is reported against the six priority areas for action and the nine outcome measures in the Diabetes Plan.

### Key points

- The Diabetes Plan sets out a vision that all New Zealanders with diabetes, or at high risk of developing type 2 diabetes, are living well and have access to high-quality, people-centred health services. You launched the Diabetes Plan on 16 October 2015. The last progress report was provided to you in May 2016 (HR20160382 refers).
- Diabetes is New Zealand's fastest growing long-term condition and poses a significant economic burden at individual and societal levels. As at end-2015 an estimated 260,458 people in New Zealand had been diagnosed with diabetes, with the number continuing to increase each year.
- Key achievements over the last six months against the prioritised actions in the Diabetes Plan include: steady progress in the implementation of the *Quality Standards for Diabetes Care* across all DHBs; improved podiatry and foot screening services; development of evidence-based advice on pre-diabetes; and ongoing work on a range of initiatives targeted at preventing high risk people from developing diabetes and enabling people to successfully self-manage their diabetes.
- Reporting against the nine outcome measures includes: completion of early work on premature mortality rates attributable to diabetes; a decline in the number of major amputations in people with diabetes; and stability in the number of cases of renal replacement therapy for people with diabetes.
- Areas for improvement in implementing the Diabetes Plan are: reducing the variation in diabetes services across the country; developing innovative models of care that reach high-risk populations; building multi-disciplinary workforce capacity; and improving data collection and analysis. These areas are being addressed through intensified engagement with DHBs, sharing best-practice information, supporting innovative approaches and improving data capture and understanding.
- The next progress report will be provided in mid-2017.

### Recommendations

This report is for your information only and does not request any decisions.

Jill Lane  
 Director  
 Service Commissioning

Minister's signature:

Date:

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## The Diabetes Plan

1. The Diabetes Plan was developed in 2015 to respond to the serious health challenge of growing numbers of people with diabetes - an estimated 260,458 people in New Zealand at end-2015 with the number increasing each year. Diabetes (New Zealand's fastest growing long-term condition) poses a significant economic burden at individual and societal levels.
2. The Diabetes Plan builds on work already underway and sets out a vision that all New Zealanders with diabetes, or at high risk of developing type 2 diabetes, are living well and have access to high-quality, people-centred health services. The focus is on supporting people to manage their condition themselves, with the priority areas of action to:
  - prevent high-risk people from developing type 2 diabetes
  - enable effective self-management
  - improve quality of services
  - detect diabetes early and reduce the risk of complications
  - provide integrated care
  - meet the needs of children and adults with type 1 diabetes.
3. You launched the Diabetes Plan in October 2015. The last progress report was provided in May 2016 (HR20160382 refers).

## Implementation progress against the priority areas for action

4. Development of the Diabetes Plan and implementation over this first year has helped focus attention on diabetes. In addition, the supporting *Quality Standards for Diabetes Care* are proving invaluable as a framework for expected service provision and support for people with diabetes.

### *Prevent high-risk people from developing type 2 diabetes*

5. The 'Understanding Diabetes' project aims to raise awareness and make available information that is reliable, accessible and easily understood. The project scope has recently been expanded to encompass development of information and resources to support the childhood obesity programme. A Thought Leaders Group has been established comprising consumers, clinicians, communications and marketing experts. This group is developing advice on appropriate resources to provide information on diabetes and to support healthy eating and physical activity.
6. In partnership with the National Diabetes Leadership Group, the Ministry has developed evidence-based advice for health providers on risk factor management for pre-diabetes. The advice includes guidance on dietary counselling, increased physical activity, weight management and behaviour modification, and was published on the Ministry website last month.

### *Enable effective self-management*

7. A text messaging self-management support service (SMS4BG) is being trialled by the University of Auckland. The trial focuses on people with poorly controlled diabetes who are of Māori or Pacific ethnicity and/or who live in rural areas. There are 366 participants involved in the trial and the early results will be available in late 2017.
8. A weight management project aiming to reduce the risk of diabetes is in progress with Compass Health and Weight Watchers. To date, 170 people at risk of diabetes have been recruited by local practices for a three-month or six-month weight management programme. This includes a higher than expected proportion of Māori and Pacific people. The project is being evaluated with the early findings due mid-2017.

### *Improve quality of services*

9. The Ministry continues to work closely with DHBs to drive implementation of the *Quality Standards for Diabetes Care* and to address some ongoing national and local variability in diabetes services. DHBs are required to undertake a stocktake of their diabetes services against the standards and report progress on this and their associated actions in their Annual Plans and quarterly reports.



10. Diabetes indicators are also contributory measures within the System Level Measures library, including diabetes detection and follow-up, HbA1c test results, Diabetes Annual Reviews and delay of progression of diabetic retinopathy.
11. In addition to the growing numbers of people with diabetes (30 percent increase in prevalence over the last five years) reported service delivery challenges include: building sufficient multi-disciplinary workforce capacity; reaching high-risk people; and variation in data collection, sharing and analysis. Other challenges described are time constraints in providing effective support for people with diabetes (especially for those with lower health literacy) and increasing clinical complexities such as in children and young people with type 1 diabetes and in younger people with type 2 diabetes (those aged 25-45 years and especially Māori, Pacific, Indo-Asian).

*Detect diabetes early and reduce the risk of complications*

12. Diabetes/mental health pilots in Northland and Tairāwhiti DHBs are underway. Northland DHB is focusing on three key groups; adults, youth and children/whānau with type 1 diabetes. Tairāwhiti DHB is adopting a kaiāwhina model working with people with diabetes referred from general practice. Malatest is evaluating the pilots with the results due late 2017.
13. An update of the CVD risk guidance is in progress. The updated guidance will have an increased focus on diabetes.
14. Significant improvements in foot screening and podiatry services have been made in a number of DHBs. This includes increased numbers of referrals and enhanced services for high-risk patients. Much of the Diabetes Care Improvement Package funding (Budget 2013) has been invested in this area.
15. New research commissioned as part of the *Diabetic Retinal Screening, Grading, Monitoring and Referral Guidance* (launched in March 2016) provides empirical evidence to support adoption of the community-based model (implemented in Capital and Coast, Hutt Valley and Wairarapa DHBs). The research indicates that the three-DHB model more efficiently uses existing health system resources, and more quickly identifies disease and improves outcomes, than the ophthalmology clinic-based model. Research findings have been submitted for journal publication consideration and will also be disseminated through normal Ministry channels.

*Provide integrated care*

16. The Healthy Attitudes and Community Engagement project lead by Dr Tom Mulholland continues. A total of 549 people have had HbA1c, blood pressure and blood lipids tested thus far, and referrals have been made to general practices where appropriate. Of these, 130 people (24 percent) had undiagnosed pre-diabetes and 26 people (5 percent) had undiagnosed diabetes. Follow-up surveys with a subsample of 94 people revealed that 84 percent had taken action to address their test results; most people increased their physical activity and/or made dietary changes.

*Meet the needs of children and adults with type 1 diabetes*

17. Work has commenced on developing a Virtual Diabetes Register (VDR) for type 1 diabetes to help estimate type 1 prevalence and guide local service provision. An updated version of the full VDR will be released in April 2017 which will support clinical and quality improvements.
18. Options for increased support for people with type 1 diabetes are being developed and these will be progressed in line with clinical and consumer guidance, dependent on available budget. These options include improved access to technology that provides more effective insulin therapy, additional support for self-management and up-skilling the health workforce.

**Progress against the identified measures**

19. The Diabetes Plan includes nine specific measures that have been developed to track progress towards improving health outcomes for people with diabetes. These measures are framed within the themes of reducing the personal burden for people with diabetes, providing service consistency across the country and reducing the cost of type 2 diabetes.



20. A summary of progress against the measures using currently-available information is provided below. More detailed data tables are attached as Appendix 1. Comprehensive data is not yet available on all measures, however the Ministry is currently progressing this and more detailed information will be provided to you in 2017.

Measure	Progress
A 20 percent reduction in complications and disability experienced by people with diabetes under the age of 75 years by 2020; with a 25–30 percent reduction for high risk population groups	A wide range of outcome measures for diabetes are in advanced stage of development and will be completed in early-mid 2017.
Reduce the rate of amputations per 1000 people with diabetes by 20 percent from that over 2010–14 by 2019, and by 30 percent for Māori and Pacific peoples	Between 2011–2015, there was a significant decline in the rate of major amputations (above-knee and below-knee) per 1000 people with diabetes, with a corresponding increase in the number of amputations of the toe (minor amputations). The number of total amputations in people with diabetes remained stable but the rate has fallen. The increased proportion of minor amputations could reflect earlier management of diabetes complications. Analysis by ethnicity is not yet complete. See Tables 1 and 2 in Appendix 1.
Reduce the rate of renal replacement per 1000 people with diabetes by 20 percent from that over 2010–14 by 2019, and by 30 percent for Māori and Pacific peoples	The number of new cases of end stage renal disease from all causes requiring renal replacement therapy was stable in New Zealand up to end-2014. For people with diabetes, the rate of renal replacement therapy was either stable or trending down. See Table 3 in Appendix 1.
A 20 percent decrease in the proportion of people with HbA1c levels >100 by 2020, with better improvement for high-risk population groups	This data has not previously been required from DHBs and PHOs, but is now requested as part of the quarterly reporting. It should be available from 2017 onwards.
By 2020, 85 percent of people with diabetes will participate in an annual review across all population groups	The Ministry does not currently have access to data to report on this measure. Work is underway to include reporting from PHOs on this measure in 2017.
A 10 percent reduction in the proportion of premature mortality (at < 75 years) due to diabetes by 2019, with a 20 percent decline for Māori and Pacific peoples. This is to be replaced when available by life expectancy and DALY targets	<p>The Ministry has just completed initial work on this measure, for which there is little prior data. This shows that in calendar year 2013, 59 percent of deaths attributable to diabetes were in people aged under 75 years (1301 of 2201 deaths) and can thus be regarded as premature. Over 40 percent of these deaths were in people of working-age (25–64 years). See Table 4 in Appendix 1.</p> <p>According to 2012–2014 data, at age 25 years, the life expectancy for Māori and non-Māori people with diabetes is 45 years and 53 years, respectively. This compares with a life expectancy of 53 years and 59 years for Māori and non-Māori people who do not have diabetes, respectively. See Table 5 in Appendix 1.</p> <p>The disability-adjusted life year (DALY) is a measure of health loss (disease burden). Measuring DALY estimates is currently problematic because much of the necessary data is not yet available. The Ministry is working to improve the way DALY estimates for diabetes and other diseases are calculated.</p>
By 2020 DHBs will have implemented quality standards for diabetes care	All DHBs are conducting or have completed stocktakes of diabetes services against the <i>Quality Standards</i> ; however, both DHB progress and reporting on this is still variable.



Reduce prevalence by a 20 percent reduction in the rate of increase of new cases of type 2 diabetes, by 2020; with a faster rate of reduction for high-risk population groups (30 percent for Māori and Pacific)	Work is underway to develop a methodology to distinguish between type 1 and type 2 diabetes. This work should be complete by mid-2017. Data from the VDR shows that the prevalence of diabetes has increased year-on-year across all DHB regions and ethnic groups. See Tables 6 and 7 in Appendix 1.
Reduce the rate of hospital admissions primarily due to diabetes (per 1000 people with diabetes) by 20 percent from that in 2014, and by 30 percent for Māori and Pacific peoples – by 2019	In 2013/14, more than 15,000 hospitalisations in New Zealand had a primary diagnosis of impaired glucose regulation and diabetes. Approximately one third of these admissions were for Māori and Pacific peoples. See Table 8 in Appendix 1.

### Next steps

21. The Ministry Diabetes team is meeting with DHB Chief Executives in early 2017 to drive the prioritisation of diabetes services. Key points emphasised will be:
  - The growing burden of diabetes and the importance of implementing the Diabetes Plan.
  - The Ministry's expectation that provision of effective high-quality services for people with diabetes will be prioritised.
  - The need for DHBs to deliver innovative models of care with their partner organisations that reach high-risk populations.
  - The value of multi-disciplinary integrated care that spans self-management, primary and specialist support.
  - The Ministry's willingness to partner with DHBs in their development and delivery of people-centred, sustainable and evidence-informed services.
  - The benefits to be gained from improved data collection, sharing and analysis.
  - The reporting requirements for diabetes services, including Annual Plans, quarterly reporting and the Systems Level Measures (as outlined in paragraphs 11 and 12).
22. In April/May 2017 the Ministry is organising another Diabetes workshop for DHBs, PHOs and their partner organisations to highlight the latest evidence, discuss workforce development options, facilitate data sharing and promote innovative practice – in particular services that reach high-risk populations.
23. Opportunities for further investment in this financial year include: additional funding for DHB initiatives that address identified gaps in DHB services for people with diabetes; increased support for people with type 1 diabetes; and potentially using social media options to enhance awareness and self-management capability.
24. The next progress report will be provided in mid-2017.

END.



## Appendix 1: Data tables to show progress against the measures in the Diabetes Plan

Data is given as raw numbers and/or rates per 1,000 people with diabetes. Given the rapidly increasing prevalence of diabetes, a static total number represents a fall in the rate.

**Table 1: Amputations data from the VDR**

	2011	2012	2013	2014	2015	Comment
Total number of diabetes related amputation procedures	700	809	877	809	849	
Rate per 1000 people with diabetes	3.32	3.60	3.67	3.22	3.26	Stable or reducing (non-significant)
Major amputations	230	238	247	241	222	
Rate per 1000 people with diabetes	1.09	1.06	1.03	0.96	0.85	Significant decline

**Table 2: Publicly funded diabetes related amputation procedures by clinical code and year of discharge**

Amputation type	Year of discharge				
	2011	2012	2013	2014	2015
Amputation of toe	223	311	315	315	336
Amputation of toe including metatarsal bone	203	218	270	212	234
Amputation of ankle through malleoli of tibia and fibula	0	1	1	0	0
Midtarsal amputation	6	8	10	13	9
Transmetatarsal amputation	30	23	31	25	44
Amputation above knee	87	105	107	94	95
Disarticulation at knee	2	1	2	1	3
Amputation below knee	143	138	140	149	127
Amputation at hip	0	2	0	0	1
Hindquarter amputation	1	0	0	0	0
Disarticulation through toe	5	2	1	0	0
Total	700	809	877	809	849

**Table 3: Rates of renal replacement therapy in people with and without diabetes, 2010-2015**

	2010	2011	2012	2013	2014	2015	Comment
New cases of renal replacement therapy	515	487	519	554	547	N/A	
Rate per million people	119	112	118	125	122		No change
New cases of renal replacement therapy from diabetes	260	205	256	269	260	N/A	
Rate per 1,000 people with diabetes	0.133	0.097	0.114	0.113	0.103		No change

**Table 4: Rates of diabetes-related deaths and deaths in people with diabetes, New Zealand 2013**

	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90 +	Total
DID	4	11	16	41	95	159	251	413	618	806	1,036	1,272	1,273	977	6972
DRD	3	8	11	28	63	102	154	239	326	366	372	301	129	98	2201
%	75	73	69	68	66	64	61	58	53	45	36	24	10	10	32

Notes: DID = number of deaths in diabetics, DRD = number of diabetes-related deaths



**Table 5: Ethnic-specific life expectancies for VDR and non-VDR populations at exact age 25, 2012-14**

LE <sub>25</sub> (years)	NonVDR	VDR	Difference
Maori	53.34	44.63	8.71
Non-Maori	58.63	53.30	5.33

**Table 6: Diabetes prevalence 2010-2015 by DHB**

DHB of domicile	2010	2011	2012	2013	2014	2015
Auckland	19,615	21,036	22,629	24,531	26,491	27,484
Bay of Plenty	10,162	10,634	11,076	11,462	11,872	12,016
Canterbury	18,625	19,357	20,308	21,076	21,799	22,558
Capital and Coast	9,798	11,225	12,406	13,145	13,602	13,861
Counties Manukau	28,565	30,941	33,507	36,508	39,724	41,982
Hawkes Bay	7,028	7,365	7,838	8,254	8,484	8,612
Hutt	6,112	6,880	7,508	7,807	8,078	8,281
Lakes	4,608	4,862	5,168	5,369	5,693	6,080
MidCentral	7,032	7,829	8,260	8,477	8,842	9,026
Nelson Marlborough	5,437	5,757	5,938	6,121	6,326	6,432
Northland	8,705	9,241	10,103	11,236	11,686	11,845
South Canterbury	2,952	3,078	3,198	3,304	3,371	3,452
Southern	12,534	13,342	14,014	14,659	14,959	15,355
Tairāwhiti	2,824	3,280	3,588	3,802	4,089	4,364
Taranaki	6,587	6,801	7,069	7,247	7,396	7,616
Waikato	17,151	18,057	19,032	20,210	21,493	22,497
Wairarapa	2,036	2,230	2,354	2,352	2,352	2,357
Waitemata	21,447	23,631	25,498	27,871	29,743	30,931
West Coast	1,228	1,279	1,299	1,309	1,321	1,388
Whanganui	3,249	3,494	3,686	3,730	3,809	3,913
Unknown/Unassigned	439	440	429	420	398	408
<b>Total</b>	<b>196,134</b>	<b>210,759</b>	<b>224,908</b>	<b>238,890</b>	<b>251,478</b>	<b>260,458</b>

**Table 7: Diabetes prevalence 2010-2015 by ethnic group**

Year	Maori	Pacific-people	Indian	European/Other	Total
2010	28,185	22,526	10,365	135,058	196,134
2011	30,171	24,349	11,377	144,862	210,759
2012	32,380	26,473	12,481	153,574	224,908
2013	34,619	28,488	13,767	162,016	238,890
2014	36,915	30,561	15,175	168,827	251,478
2015	38,610	32,017	16,045	173,786	260,458

**Table 8: Number of inpatient and day hospitalisations due to impaired glucose regulation and diabetes mellitus in 2013/14, by ethnic group**

	Maori			Pacific			Other			All ethnic groups		
	Inpatient	Day	Total	Inpatient	Day	Total	Inpatient	Day	Total	Inpatient	Day	Total
<b>Total</b>	1,758	1,282	3,040	906	1,000	1,906	5,488	4,842	10,330	8,152	7,124	15,276
<b>Male</b>	905	620	1,525	433	427	860	3,040	2,561	5,601	4,378	3,608	7,986
<b>Female</b>	853	662	1,515	473	573	1,046	2,448	2,281	4,729	3,774	3,516	7,290



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## Progress update on implementing Living Well with Diabetes

To: Hon Dr Jonathan Coleman, Minister of Health



### Purpose

This report provides you with an update on diabetes and a summary of progress towards implementing *Living Well with Diabetes: A plan for people at high risk of or living with diabetes 2015-2020* (the Diabetes Plan). The last diabetes update was provided to you in December 2016 (HR20161937 refers).

### Key points

1. Diabetes poses a significant economic burden at individual and societal levels. As at end-2016, an estimated **241,463 people in New Zealand had diabetes**, as modelled by the Virtual Diabetes Register.
2. The prevalence of diabetes in New Zealand has continued to rise over 2010-2016 especially in Pacific, Indo-Asian and Maori ethnicities, but the rate of increase has slowed over the last few years.
3. **Over 2010-2016 there appears to have been a marked increase in diabetes prevalence in younger adults aged 25-50 years.** This is apparent in all ethnicities except Indo-Asian and is most pronounced in Pacific peoples and Maori.
4. The Diabetes Plan was launched by you in October 2015 to respond to the serious health challenges of diabetes. It builds on work already underway and sets out a vision that all New Zealanders with diabetes, or at high risk of developing type 2 diabetes, are living well and have access to high-quality, people-centred health services.
5. Where possible, available data has been provided for the measures in the Diabetes Plan. **The measures indicate that the prevalence of diabetes is rising but that the complications arising from diabetes are relatively stable.** Although the personal burden of disease appears to have stabilised, we are not yet seeing a turning of the curve.
6. Key achievements over the last six months include ongoing visits to District Health Boards (DHBs) to support the implementation of the Diabetes Plan and the *Quality Standards for Diabetes Care*; delivery of a successful diabetes workshop for the sector to share best practice, innovative approaches and latest research; and continuing delivery of a range of projects that provide support to people with or at risk of diabetes.
7. Next steps for the Ministry include exploring future investment in initiatives targeted to enhance diabetes service delivery and meet the needs of high-risk populations; and investigating options to centralise laboratory test results.
8. The next progress report will be provided at end-2017.

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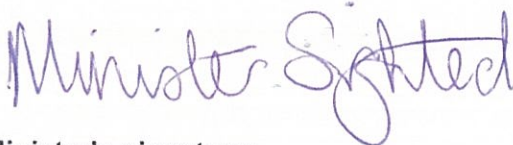


## Recommendations

This report is for your information only and does not request any decisions.



Jill Lane  
Director  
Service Commissioning

  
Minister's signature:  
Date: 27/7/17

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## The prevalence of diabetes continues to increase

1. Diabetes poses a significant and increasing economic burden at individual and societal levels. As at end-2016, an estimated 241,463 people in New Zealand had diabetes.
2. The prevalence of diabetes in New Zealand, as measured by the latest Virtual Diabetes Register (VDR), has continued to rise over 2010-2016 especially in Pacific, Indo-Asian and Maori ethnicities, but the rate of increase has slowed over the last few years (Appendix 1, table 5).
3. Over 2010-2016 there appears to have been a marked increase in type 2 diabetes prevalence in younger adults aged roughly 25-50 years. This increase has been seen internationally and this cohort typically experience complications, morbidity and mortality from diabetes at a younger age than in previous decades. International data and experience indicate these people are more difficult to manage and less likely to engage with effective preventive clinical care.
4. The increase in diabetes prevalence at a younger age is apparent in all ethnicities except Indo-Asian and is most pronounced in Pacific peoples and Māori. The lack of an apparent parallel increase in Indo-Asians is probably due to high recent immigration – the 'healthy migrant' effect.
5. Mortality data from 2013 suggests that Māori and Pacific people with diabetes are five to seven times more likely than European/Other to die from a diabetes-related cause between ages 40-70 years.

## Implementing the Diabetes Plan

6. Living Well with Diabetes (the Diabetes Plan) was launched by you in October 2015 to respond to the serious health challenges of diabetes. It builds on work already underway and sets out a vision that all New Zealanders with diabetes, or at high risk of developing type 2 diabetes, are living well and have access to high-quality, people-centred health services.
7. The focus is on supporting people to manage their condition themselves, with the priority areas of action to:
  - prevent high-risk people from developing type 2 diabetes
  - enable effective self-management
  - improve quality of services
  - detect diabetes early and reduce the risk of complications
  - provide integrated care
  - meet the needs of children and adults with type 1 diabetes.
8. To date implementation of the Diabetes Plan has been managed largely through baseline funding. This has been supported by \$12.4 million allocated to district health boards (DHBs) as part of Budget 2013 to support implementation of Diabetes Care Improvement Packages (DCIP). DCIP funding has been devolved to DHBs from 1 July 2017. It is difficult to ascertain if service funding has increased at the same rate as the increase in diabetes prevalence, as funding is now devolved to DHBs (HR20170360 refers).
9. Key achievements and implementation progress areas over the last six months include:
  - i. As part of the 'Understanding Diabetes' project, a review of consumer-focused, awareness-raising diabetes resources is now complete. The advisory group, chaired by a consumer, have reviewed the findings and made recommendations on appropriate resources to provide information on diabetes and to support healthy eating and physical activity. A final report summarising findings of the stocktake and recommendations of the advisory group is due July 2017. Information from this report will be used to inform future work to raise awareness and make available information that is reliable, accessible and easily understood.
  - ii. The weight management programme by Compass Health is nearing completion. Two hundred and six people at risk of developing diabetes or heart disease have been referred by their GPs to enrol in either a three-month or six-month Weight Watchers programme.



- Preliminary results show notable weight loss and reduced HbA1c in this cohort. An evaluation is being conducted by Otago University, with a final report due July 2017.
- iii. The Northland and Tairāwhiti DHB projects to support people with diabetes and mild to moderate mental health issues are progressing well. The three Northland DHB projects support newly diagnosed children with type one diabetes and their whānau; use a theatre group to support rangatahi with type 1 diabetes; and provide a range of supports for adults with poorly controlled diabetes. The Tairāwhiti DHB project utilises kaiāwhina and social workers to provide support for adults with poorly controlled diabetes. Malatest is evaluating the projects, with a report due end-2017.
  - iv. The Healthy Attitudes and Community Engagement project led by Dr Tom Mulholland is due to be completed in July 2017. A key success over this six months has been engaging with the South Indian community in South Auckland, who have responded positively to point-of-care testing at the workplace or place of worship. Additionally, social media has been used effectively to reach a large number of people. A final evaluation report measuring changes in clinical outcomes and healthy behavioural changes is due late July 2017.
  - v. A new electronic decision support tool and accompanying education tools for primary care providers to identify and manage chronic kidney disease continue to be rolled-out. To date, the electronic tool has been launched in 18 DHBs. Work has commenced to monitor the utilisation of the tool, with a focus on whether the tool is being used in regions with high-needs populations.
10. Other activities supporting the implementation of the Diabetes Plan include:
- i. The Ministry continues to work closely with all DHBs to support the implementation of the *Quality Standards for Diabetes Care* and to address national and regional variability in diabetes services. DHBs are assessing their diabetes services against the *Quality Standards* and reporting in their Annual Plans and six-monthly reports on actions to address any identified gaps.
  - ii. Over the past six months, the Ministry diabetes team has visited three DHBs (Canterbury, Southern, Hawke's Bay) to discuss and review regional progress towards implementing the Diabetes Plan. In total, eight DHBs have been visited in the past year, representing almost 70 percent of the diabetes demographic in New Zealand. Most DHBs are making significant progress towards implementing the *Quality Standards for Diabetes Care*. A general limitation across DHBs is access to PHO and practice data, which is critical to equitable implementation. Further DHB visits are planned for the next six months.
  - iii. Half of the DHBs have identified diabetes-related contributory measures in their 2017/18 System Level Measures improvement plans. A further three DHBs have indicated their intention to include diabetes as a contributory measure in the 2017/18 out years (see Appendix 2).
  - iv. Kidney Health New Zealand are developing a suite of contributory measures to be included in the System Level Measures library. This will enable DHBs to choose to focus on improving services for people with diabetic-related kidney disease.
  - v. Development of the updated cardiovascular disease (CVD) consensus statement is continuing and is now being progressed by a multidisciplinary group involving the Heart Foundation and the New Zealand Society for the Study of Diabetes. A consensus was reached by stakeholders in June 2017. A draft document is being finalised and is currently being reviewed. Implementation work will link with IT stakeholders and also align with the DHB annual planning process. This will mean more accurate CVD risk prediction among people with diabetes and improved primary care promotion of appropriate management decisions.
  - vi. In collaboration with academic colleagues and the National Diabetes Leadership Group, the Ministry is examining data on transition from pre-diabetes to diabetes. Initial results suggest that it may be appropriate to better target intervention to those at highest risk of developing diabetes.



11. The National Diabetes Leadership Group, comprising members with backgrounds in clinical leadership, primary care, DHB planning and funding, and consumers, continues to meet to provide advice to the Ministry and the sector. Key issues over this period have included: clarifying key messages on pre-diabetes; identifying steps to address complications for inpatients with diabetes; new technology for people with type 1 diabetes; and raising national awareness of the emerging issue of early onset diabetes.
12. A successful two-day Diabetes and Long Term Conditions workshop was held for DHBs, PHOs and the sector on 5-6 April 2017. The intent of the workshops was to share best practice and innovative approaches, deliver updates on the latest research and provide a forum for networking. There were 100 attendees each day and sessions included consumer presentations, workshop discussions and presentations from DHBs and PHOs on innovative service provision.
13. Initial exploratory social investment work by the Ministry indicated potential areas for intervention that included: diabetic kidney disease, amputation prevention, and young adults with type 2 diabetes from deprived communities. The findings of this work will be used to inform investment decisions for the 2017/18 budget.
14. Implementation of the Diabetes Plan has been slower in 2017 due to Service Commissioning having to prioritise a large work programme. As a mitigation, the Ministry diabetes team is working to increasingly engage with the sector, supporting DHBs and PHOs and sharing good practice, within the constraints that exist.

### Progress against the identified measures

15. The Diabetes Plan includes nine measures that were developed to track progress towards improving health outcomes for people with diabetes. These measures are focused on measuring a reduction in the personal burden for people with diabetes; provision of consistent services across the country; and a reduction in the cost of type 2 diabetes.
16. Progress against these measures has been summarised below, and more detailed data tables are included as Appendix 1. Comprehensive data is not yet available for all of the measures because of team resource constraints and the recent change to the Virtual Diabetes Register (VDR), however the Ministry is currently progressing this and more detailed information will be provided to you in future progress reports (end-2017 and mid-2018). Note that data from the VDR presented here should not be compared with numbers derived from any previous version of the VDR as a recent revision made to the VDR algorithm has resulted in a reduction in totals. Any comparison may result in artificial and inaccurate trends.

Measure	Progress
A 20 percent reduction in complications and disability experienced by people with diabetes under the age of 75 years by 2020; with a 25–30 percent reduction for high risk population groups	A wide range of outcome measures for diabetes are in advanced stage of development and will be completed in late 2017.
Reduce the rate of amputations per 1000 people with diabetes by 20 percent from that over 2010–14 by 2019, and by 30 percent for Māori and Pacific peoples	<p>Between 2010-2016, the total number of amputations has increased across all ethnicities except Indian. The rate of amputations per 1,000 people with diabetes has remained relatively stable, with a decline for Maori and Indian people.</p> <p>The number of major amputations (above-knee and below-knee) has remained relatively stable between 2010-2016, though the rate of major amputations per 1,000 people with diabetes has declined. The decreased proportion of major amputations might reflect earlier management of diabetes complications. See Tables 1 and 2 in Appendix 1.</p>



Reduce the rate of renal replacement per 1000 people with diabetes by 20 percent from that over 2010–14 by 2019, and by 30 percent for Māori and Pacific peoples	No new data was available for this reporting period. Data on renal replacements will be updated at end-2017 and will be included in the next progress report.
A 20 percent decrease in the proportion of people with HbA1c levels >100, by 2020, with better improvement for high-risk population groups	<p>To date, this data has been provided from DHBs and PHOs for quarter one of 2016/17. Noting issues with the completeness of the data, less than half of Maori and Pacific people with diabetes met the glycaemic control target of HbA1c ≤64 mmol and just over half of European/Other people met this target. HbA1c ≥101 for all population groups was 2-3%. See Table 3 in Appendix 1.</p> <p>The Ministry is working with DHBs to address issues in providing complete and accurate HbA1c data.</p>
By 2020, 85 percent of people with diabetes will participate in an annual review across all population groups	The Ministry does not currently have access to data to report on this measure. Work is planned to establish reporting requirements from PHOs on this measure from 2018.
A 10 percent reduction in the proportion of premature mortality (at < 75 years) due to diabetes by 2019, with a 20 percent decline for Māori and Pacific peoples. This is to be replaced when available by life expectancy and DALY targets	No new data was available for this reporting period. Mortality data will be updated at end-2017 and will be included in the next progress report.
By 2020 DHBs will have implemented quality standards for diabetes care	All DHBs are conducting or have completed stocktakes of diabetes services against the <i>Quality Standards</i> . From 2017/18, DHBs are required to provide six-monthly progress reports on their implementation of the <i>Quality Standards</i> .
Reduce prevalence by a 20 percent reduction in the rate of increase of new cases of type 2 diabetes, by 2020; with a faster rate of reduction for high-risk population groups (30 percent for Māori and Pacific)	Work is underway to develop a methodology to distinguish between type 1 and type 2 diabetes. This work should be complete by late 2017/early 2018. VDR data from end-2016 shows that the prevalence of diabetes has continued to increase annually across all DHB regions and ethnic groups. See Tables 4 and 5 in Appendix 1.
Reduce the rate of hospital admissions primarily due to diabetes (per 1000 people with diabetes) by 20 percent from that in 2014, and by 30 percent for Māori and Pacific peoples – by 2019	Since 2014/15, the total number of hospital admissions primarily due to diabetes has remained stable across all ethnic groups. See Table 6 in Appendix 1.

## Next steps

17. The Ministry Diabetes team is exploring opportunities for future thinking in the following:
  - i. Support DHBs to identify and develop targeted services to reach their high-risk populations.
  - ii. Update the 2014 Toolkit that accompanies the *Quality Standards for Diabetes Care 2014* to ensure it remains current, fit for purpose and underpins service quality improvement.
  - iii. Consider a moderated social media campaign for diabetes that supports self-management to prevent high-risk people from developing type 2 diabetes and to detect diabetes early and reduce the risk of complications.
  - iv. Target implementation of the Gestational Diabetes Guidelines and service improvement by encouraging new models of care that are woman/whānau-centric and provide integrated maternity care with wrap around nutrition and physical activity support for pregnant mothers.
  - v. Improved services for children and young people with type 1 diabetes by reviewing current services and developing a programme that includes better access to technology, more effective insulin therapy management and improved data collection.



- vi. Consider a national awareness programme that: targets high risk populations; supports services identified by DHBs in their gap analysis; and follows through on the current 'Understanding Diabetes' project.
- 18. The Ministry diabetes team has a data subgroup meeting twice annually to review available data and to improve/expand outcome measures. One favoured option deriving from the data group would be the central/regional collection of laboratory test results, as opposed to simply the fact of a test as currently happens. This would allow immediate quality monitoring and corrective action, rather than relying on local collection which is variable in quality, quantity and availability.
- 19. The next progress report will be provided to you at end-2017.

END.

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## Appendix 1: Data tables to show progress against the measures in the Diabetes Plan

Data is given as raw numbers and/or rates per 1,000 people with diabetes. Given the rapidly increasing prevalence of diabetes, a static total number represents a fall in the rate.

**Table 1: Publicly funded discharges that contain a diabetes related amputation procedure by ethnicity and year of discharge, 2011 – 2016**

Prioritised ethnicity	Year of discharge					
	2011	2012	2013	2014	2015	2016
European/Other	358	406	454	431	445	438
Rate per 1,000 people with diabetes	2.62	2.84	3.06	2.84	2.87	2.78
Indian	13	15	11	11	18	13
Rate per 1,000 people with diabetes	1.18	1.26	0.86	0.80	1.23	0.85
Maori	127	153	125	122	137	146
Rate per 1,000 people with diabetes	4.38	4.96	3.83	3.55	3.83	3.95
Pacific People	61	56	67	70	61	78
Rate per 1,000 people with diabetes	2.56	2.18	2.45	2.41	2.00	2.48
Total	559	630	657	634	661	675
Rate per 1,000 people with diabetes	2.79	2.98	2.97	2.77	2.80	2.80

Note: Diabetes related amputation procedures are only counted if the discharge contains the procedures listed in table 2 and a diagnosis of diabetes mellitus. Further to this, procedures are not counted if the discharge contains any diagnosis of trauma or a diagnosis of lower limb cancer.

**Table 2: Publicly funded diabetes related amputation procedures by clinical code and year of discharge**

Amputation type	Year of discharge					
	2011	2012	2013	2014	2015	2016
Amputation of toe	223	311	315	315	335	339
Amputation of toe including metatarsal bone	203	218	270	212	235	244
Disarticulation through ankle						1
Amputation of ankle through malleoli of tibia and fibula	0	1	1	0	0	0
Midtarsal amputation	6	8	10	13	9	7
Transmetatarsal amputation	30	23	31	25	44	39
Amputation above knee	87	105	107	94	95	102
Disarticulation at knee	2	1	2	1	3	1
Amputation below knee	143	138	140	149	127	131
Amputation at hip	0	2	0	0	1	0
Hindquarter amputation	1	0	0	0	0	0
Disarticulation through toe	5	2	1	0	0	1
Total	700	809	877	809	849	865

Notes: Diabetes related amputation procedures are only counted if the discharge contains the procedures listed in table 2 and a diagnosis of diabetes mellitus. Further to this, procedures are not counted if the discharge contains any diagnosis of trauma or a diagnosis of lower limb cancer.

Multiple amputations occurring within the same hospital discharge are counted each time.



Table 3: Number and proportion of people with HbA1c  $\geq 101$  mmols/mol by ethnicity

Ethnicity	Proportion of people in each HbA1c category			
	HbA1c $\leq 64$ mmols	HbA1c 65-80 mmols	HbA1c 81-100 mmols	HbA1c $\geq 101$ mmols
European/Other	54%	10%	4%	2%
Maori	44%	11%	8%	3%
Pacific	41%	13%	11%	2%
Total	51%	11%	6%	2%

Notes: Data for HbA1c  $\leq 64$  mmols has been provided by all 20 DHBs, yet data for HbA1c  $\geq 65$  mmols has been provided by 18 of 20 DHBs.

The following data collection issues have been reported by DHBs: unable to provide results from all PHOs, only able to report on patients who have had an annual review, only providing data for the current month rather than for the quarter/year to date, and other data integrity issues.

Source: 2016/17 Quarter 2 HbA1c report

Table 4: Number of people on the Virtual Diabetes Register (VDR) Dec 2010 - 2016 by DHB of domicile

DHB of domicile	2010	2011	2012	2013	2014	2015	2016
Auckland	18,573	19,647	20,657	21,718	22,836	23,867	24,508
Bay of Plenty	9507	9917	10,241	10,433	10,537	10,330	10,391
Canterbury	18,103	18,706	19,467	20,075	20,664	21,261	21,959
Capital and Coast	9393	10,788	11,899	12,436	12,805	13,119	13,350
Counties Manukau	27,845	29,877	32,092	34,430	36,927	39,007	40,266
Hawkes Bay	6797	7080	7494	7865	8025	8181	8370
Hutt	5812	6575	7211	7467	7699	7866	7903
Lakes	4340	4547	4793	4928	5178	5430	5589
MidCentral	6814	7463	7797	7953	8120	8331	8446
Nelson Marlborough	5282	5677	5686	5786	5933	6022	6080
Northland	8515	8998	9605	10,425	10,734	10,844	10,952
South Canterbury	2763	2862	2969	3016	3040	3107	3150
Southern	12,002	12,672	13,206	13,525	13,578	13,804	14,146
Tairāwhiti	2621	2919	3098	3241	3357	3444	3388
Taranaki	6205	6347	6510	6597	6659	6767	6781
Waikato	16,548	17,396	18,125	18,895	19,637	20,406	20,998
Wairarapa	1919	2075	2198	2218	2228	2223	2199
Waitemata	20,296	22,136	23,651	24,959	25,908	27,020	27,796
West Coast	1195	1226	1213	1204	1192	1254	1305
Whanganui	3045	3255	3420	3471	3533	3616	3744
Unknown/Unassigned	285	272	259	224	200	174	142
<b>Total</b>	<b>187,860</b>	<b>200,235</b>	<b>211,591</b>	<b>220,866</b>	<b>228,790</b>	<b>236,073</b>	<b>241,463</b>

Note: People that were either not enrolled in a PHO or were not alive, as at 31/12 of the relevant year, have been excluded.

Source: VDR Dec 2010–2016 (v686). Note that data from the VDR presented here should not be compared with numbers derived from any previous version of the VDR as a recent revision made to the VDR algorithm has resulted in a reduction in totals. Any comparison may result in artificial and inaccurate trends.

Table 5: Number of people on the Virtual Diabetes Register (VDR) by ethnic group, 2010 - 2016

Year	Maori	Pacific-people	Indian	European/Other	Total
2010	27,257	22,143	10,086	128,374	187,860
2011	29,003	23,799	10,981	136,452	200,235
2012	30,827	25,649	11,924	143,191	211,591
2013	32,634	27,296	12,764	148,172	220,866
2014	34,355	29,001	13,750	151,684	228,790
2015	35,769	30,445	14,632	155,227	236,073
2016	36,978	31,480	15,383	157,622	241,463

Note: People that were either not enrolled in a PHO or were not alive, as at 31/12 of the relevant year, have been excluded.

Source: VDR Dec 2010–2016 (v686)



**Table 6: Number of publicly funded hospital discharges due to diabetes mellitus by prioritised ethnic group, 2013/14 - 2015/16**

Year	Maori	Pacific	Asian	European / other	Total
2013/14	3,124	2,031	1,162	9,278	15,595
2014/15	1,268	601	281	3,835	5,985
2015/16	1,254	635	289	3,768	5,946

Notes: Discharges had a primary diagnosis of diabetes mellitus.

As of 1 July 2014 diabetes mellitus did not need to be sequenced as the primary diagnosis anymore (it was previously required in some cases pre 1 July 2014). This change is clearly shown with the notable decrease between 2013/14 and 2014/15.

Because of the clear administrative reason for this trend, please use this numbers with caution.

Source: National Minimum Dataset (NMDS)

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## Appendix 2: DHBs with diabetes-related contributory measures

The following DHBs have identified diabetes-related contributory measures in their 2017/18 System Level Measures improvement plans:

- Capital and Coast
- Hutt Valley
- Lakes
- Nelson Marlborough
- Southern
- Tairāwhiti
- Taranaki
- Waikato
- Wairarapa
- Whanganui

The following DHBs have indicated their intention to include diabetes-related contributory measures in the 2017/18 out years:

- Auckland
- Counties Manukau
- Waitemata

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Action required by: routine

## Progress update on implementing *Living Well with Diabetes: A plan for people at high risk of or living with diabetes 2015-2020*

To: Hon Dr David Clark, Minister of Health

### Purpose

This report provides you with a summary of progress towards implementing *Living Well with Diabetes: A plan for people at high risk of or living with diabetes 2015-2020* (the diabetes plan). This covers progress made since the diabetes plan was launched in October 2015, with a specific focus on the last seven months.

### Key points

- Diabetes is one of New Zealand's fastest growing long-term conditions and poses a significant contributor to the burden of disease over the lifespan. Tackling diabetes and the associated co-morbidities has the potential to improve outcomes and support the Government's priorities to: improve equity; and improve child wellbeing, mental health and primary care. If the diabetes plan is successful, we would expect to see a decrease in inequities and a reduction in co-morbidities such as obesity, cardiovascular disease, mental illness, renal disease, blindness and amputations.
- Following the launch of the diabetes plan, progress across the country has been slow due to system factors such as workforce and funding. Over the past year there has been evidence of improved integration across primary, secondary and community services. The Ministry diabetes team is seeking to build on this momentum to support the sector in delivering quality diabetes services.
- Now that we are halfway through the implementation of the diabetes plan, all DHBs have been asked to self-audit their progress against the *Quality Standards for Diabetes Care* by the end of April 2018. Results will help DHBs to measure their progress and determine priority areas for improvement. A summary of the self-audits will be included in the next progress report.
- As at end-2016, an estimated 241,463 people in New Zealand had diabetes, as modelled by the Virtual Diabetes Register.
- The prevalence of diabetes in New Zealand has risen by 29 percent between 2010–2016. This was most pronounced in people of Māori, Pacific and South-Asian ethnicities. However, the rate of increase in diabetes prevalence has slowed over the last few years, and has remained relatively static in all ethnic groups between 2014-2016.
- The diabetes plan was co-developed with consumers and the sector and launched in October 2015. It provides a medium-term plan to tackle diabetes and has a vision that all New Zealanders with diabetes, or at risk of developing type 2 diabetes, are living well and have access to high-quality, people-centred health services.
- The Ministry of Health diabetes team works with the health sector to oversee the implementation of the diabetes plan. DHBs report on progress to the Ministry every six months.
- Most DHBs are showing better integration and collaboration across disciplines and levels of care. There are some efforts to improve HbA1c levels across high risk populations, though success is variable across DHBs.

Contacts:	Clare Perry, Group Manager Integrated Service Design	s 9(2)(a)
	Sue Riddle, Manager CVD Diabetes and Long Term Conditions	s 9(2)(a)



- The diabetes team is working with the National Diabetes Leadership Group that includes clinicians and consumers to identify quality improvement opportunities to successfully implement the Diabetes plan by 2020.
- Next steps for the Ministry diabetes team will focus on identifying and supporting opportunities to improve primary care readiness to drive diabetes improvements, and opportunities for people with diabetes to better self-manage their condition.
- Where possible, available data has been provided for the measures in the diabetes plan. The measures indicate that amputations arising from diabetes have remained relatively stable but the rate of people with diabetes requiring renal replacement has declined since 2010. Between 2013–2015, diabetes was responsible for an average of 2,147 deaths per year. Of these, approximately 61 percent were premature (aged less than 75 years at the time of death). Māori and Pacific peoples with diabetes aged between 40 and 70 years are five to seven times more likely than European/Other to die from a diabetes-related cause.
- The next progress report will be provided in September 2018.

## Recommendations

This report is for your information only and does not require any decisions.

  
Jill Lane  
Director  
Service Commissioning

Minister's signature:

Date:



## Update on the implementation of *Living Well with Diabetes* – March 2018

### The prevalence and impact of diabetes has continued to rise, but the increase in prevalence may have slowed

1. Diabetes is one of New Zealand's fastest growing long-term conditions and poses a significant burden at individual, economic and societal levels. It is a major cause of renal failure, blindness and amputations, and a substantial contributor to premature stroke and cardiovascular disease (CVD); all largely preventable and expensive conditions.
2. At the end of 2016, an estimated 241,463 people in New Zealand had diabetes (Virtual Diabetes Register 2016<sup>1</sup>).
3. Approximately 90-95 percent of people with diabetes have type 2 diabetes which is largely preventable. About a quarter of New Zealanders are believed to have pre-diabetes and, without preventative action, are likely to develop type 2 diabetes.
4. People who are obese, have a poor diet, mental illness or poor health literacy are at greater risk of diabetes. Adults living in the most socioeconomically deprived areas are over three times more likely to report that they have been diagnosed with diabetes than adults living in the least deprived areas.
5. People with diabetes are more likely to experience depression and other co-morbidities. This is associated with lost productivity, reduced quality of life, worse diabetes self-care and poorer diabetes control, in addition to higher health care utilisation and costs.
6. The estimated prevalence of diabetes in New Zealand has risen by 29 percent between 2010–2016. This was most pronounced in people of Māori, Pacific and South-Asian<sup>2</sup> ethnicities, which partly reflects increasing population numbers. The aging population and people living longer with diabetes and associated co-morbidities also contributes to the increase in diabetes prevalence.
7. The rate of increase in diabetes prevalence has slowed over the last few years and has remained relatively static in all ethnic groups (Appendix 3, Table 10). This slowing appears to be a global trend, though is less pronounced in New Zealand.
8. Between 2010–2016 there appears to have been a marked increase in type 2 diabetes prevalence in younger adults aged roughly 25–50 years. This increase has been seen internationally; this cohort typically experience complications, morbidity and mortality from diabetes at a younger age than in previous decades and they may be less likely to engage with effective preventive clinical care.
9. The increase in diabetes prevalence at a younger age is apparent in people of all ethnicities except South-Asian, and is most pronounced in Māori and Pacific peoples. The lack of an apparent parallel increase in South-Asian people is probably due to high recent immigration; the 'healthy migrant' effect.
10. According to recent diabetes mortality data from the Ministry (unpublished), Māori and Pacific peoples with diabetes aged between 40 and 70 years are five to seven times more likely than European/Other to die from a diabetes-related cause (Appendix 3, Table 7).
11. Of all specific causes of health loss in New Zealand, diabetes has advanced the furthest since 1990. It is now the 7th leading cause of health loss for males (2.9% of Disability Adjusted Life Years (DALYs)) and 12th for females (2.6% of DALYs)<sup>3</sup>.

<sup>1</sup> <http://www.health.govt.nz/our-work/diseases-and-conditions/diabetes/about-diabetes/virtual-diabetes-register-vdr>

<sup>2</sup> South-Asian peoples: Indian, including Fijian Indian, Sri Lankan, Afghani, Bangladeshi, Nepalese, Pakistani, Tibetan.

<sup>3</sup> <http://www.health.govt.nz/publication/health-loss-new-zealand-1990-2013>



## The costs of diabetes

12. The increased prevalence of diabetes has a major financial impact on the New Zealand health system. In 2014/15 diabetes-related pharmaceutical costs alone were estimated as \$48.5 million and laboratory costs \$23.4 million. Modelling by Price Waterhouse Coopers Ltd (PWC) (2008) estimated that type 2 diabetes would cost \$1.3 billion in 2016/17 (or approximately \$3,832 per person) and increase to \$1.8 billion in 2021/22 with only basic diabetes health services in place.
13. If diabetes prevalence continues to increase, the financial and non-financial costs of diabetes and associated factors/complications are expected to continue to escalate. It is anticipated that more people will develop the associated co-morbidities of type 2 diabetes such as kidney disease, stroke, cardiovascular disease, mental illness, diabetic retinopathy/blindness and lower limb amputations. This will probably result in:
  - a. increased burden for the health system, including primary/community services, pharmaceutical and laboratory costs, and spending on inpatient services. International studies have estimated that over half of the inpatient costs incurred by people with diabetes are attributable to complications of the condition and the increased treatment complexity.
  - b. ongoing or greater variance in access to health services and in workforce capacity and service quality across the country. This variance may contribute to ongoing or increased disparities in health outcomes.

## The Ministry's response: Living Well with Diabetes

14. *Living Well with Diabetes: A plan for people at high risk of or living with diabetes 2015–2020* (the diabetes plan)<sup>4</sup> was co-developed with consumers and the sector and launched in October 2015. It provides a medium-term plan to tackling diabetes, and has a vision that all New Zealanders with diabetes, or at risk of developing type 2 diabetes, are living well and have access to high-quality, people-centred health services.
15. The overarching objectives of the diabetes plan are to:
  - a. reduce the personal burden of disease for people with diabetes by providing integrated services along with the tools and support people need to manage their own health
  - b. provide consistent and sustainable services across the country that improve health outcomes and equity for all New Zealanders, including through better use of health information
  - c. reduce the cost of diabetes on the public health system, and the broader societal impact in the longer term.
16. The diabetes plan focuses on supporting people to manage their condition themselves, with the priority areas of action to:
  - a. prevent high-risk people from developing type 2 diabetes
  - b. enable effective self-management
  - c. improve quality of services
  - d. detect diabetes early and reduce the risk of complications
  - e. provide integrated care
  - f. meet the needs of children and adults with type 1 diabetes.
17. The diabetes plan is implemented in addition to a number of other Government initiatives that enable New Zealanders to live a healthy lifestyle, including Healthy Families NZ, Green Prescription and regional programmes delivered through DHBs, local government and the education sector. These initiatives will contribute to reducing the impact of obesity in New Zealand and help reduce the incidence of type 2 diabetes in the long term.
18. In 2013/14, the Ministry released the *Quality Standards for Diabetes Care* (the Quality Standards) and accompanying toolkit<sup>5</sup>. The 20 Quality Standards provide guidance for the health sector to

<sup>4</sup> <http://www.health.govt.nz/publication/living-well-diabetes>

<sup>5</sup> <http://www.health.govt.nz/our-work/diseases-and-conditions/diabetes/quality-standards-diabetes-care>



support planning high quality clinical services and comprehensive patient-centred care. The Quality Standards complement the diabetes plan and provide a benchmark for DHBs, PHOs and general practices.

## Progress towards implementing Living Well with Diabetes

19. Working with the health sector, the Ministry of Health diabetes team oversees the implementation of the diabetes plan. DHBs report on progress to the Ministry every six months.
20. Since November 2017 the Ministry diabetes team has visited six DHBs to meet with primary, specialist and community-based allied health services with DHB portfolio managers to discuss the regional implementation of the diabetes plan. DHB visits are very valuable for both the Ministry and the DHBs. As a result, the Ministry has a greatly improved understanding of diabetes services across the regions and also improved engagement and closer relationships with the sector. The team will be meeting with another four DHBs in early 2018.
21. Most DHBs are progressing the implementation of the diabetes plan and showing improved integration and collaboration between primary and secondary care and community services. There is some evidence of efforts to identify and reduce overall HbA1c levels across high risk populations, though with greater success in some DHBs than others. However, it is too early to indicate whether there is a sustainable downward trend. Some notable DHBs support innovative community programmes to improve the health and wellbeing of people with diabetes that appear to have impact beyond individuals to include their wider whānau. There remain concerns about equity of access and outcomes in some DHBs, PHOs and practices.
22. As we are now halfway through the implementation of the diabetes plan, the Ministry diabetes team is asking all DHBs to self-audit their progress against the Quality Standards by the end of April 2018. Results will enable DHBs to measure their progress and determine priority areas for improvement. The results will also enable the Ministry to understand any national trends that may benefit from additional support and facilitate sharing of best practice examples across DHBs.
23. The Ministry has commissioned a number of projects and contracts intended to support the implementation of the diabetes plan. More information on these is provided in Appendix 1.

## Requirements for successful continuation of Living Well with Diabetes

24. Our DHB visits have indicated that there is wide variation in the implementation of the diabetes plan across the country. Services require a greater level of national consistency to achieve equity for all New Zealanders with or at risk of diabetes. Results from the DHBs' stocktake against the Quality Standards will be used by the Ministry team to identify and prioritise support for key areas.
25. The diabetes team is working with the National Diabetes Leadership Group that includes clinicians and consumers to identify quality improvement opportunities to successfully implement the Diabetes plan by 2020.

## Next steps for 2018

26. Two main areas of focus are: opportunities to improve support for people with diabetes to better self-manage; and supporting opportunities to improve primary care readiness to drive diabetes improvements. The Ministry team will work closely with the sector to improve equity in outcomes for Māori and Pacific people and better support people with diabetes to self-manage. This may include SMS messaging, better coordination of culturally-appropriate diabetes self-management education, enhanced services for young people with type 1 diabetes and making a wider range of languages available in patient information resources.
27. In addition, the future of primary care in supporting diabetes improvements and building a better platform for services may emerge from the Primary Care Review.

END.



## Appendix 1: Ministry initiatives and projects to support the implementation of the diabetes plan, 2015–2018

### Initiatives

1. Implementation of the diabetes plan has been managed almost entirely through baseline funding. This has been supported by \$12.4 million allocated to district health boards (DHBs) as part of Budget 2013 to support implementation of Diabetes Care Improvement Packages (DCIP). DCIP funding was devolved to DHBs from 1 July 2017 (HR20170360 refers). The total value of DCIP funding remains unchanged (\$3.1 million across all DHBs for 2017/18).
2. More Heart and Diabetes Checks funding from Budget 2013 was also made available to DHBs to increase the number of CVD risk assessments. From 1 July 2017, this has been rolled over for another year, with a particular focus on increasing assessments for Māori men aged 35–44 years.
3. The Ministry has established a National Diabetes Leadership Group comprising of members with backgrounds in clinical leadership, primary care, DHB planning and funding and consumers, who meet quarterly to provide advice to the Ministry on implementation of the diabetes plan.
4. Each year the Ministry releases national estimates of diabetes prevalence based on the VDR, which is used to monitor the prevalence of diabetes and support national and local clinical quality improvements. In 2016 the algorithm used to create the VDR was assessed against the Auckland TestSafe repository of test results and improvements to the algorithm were made in early 2017 to create the latest version of the VDR. This has helped some DHBs implement the diabetes plan by providing a de facto denominator at a local level.
5. In 2016 and 2017 the Ministry's diabetes team held a dedicated one-day diabetes workshop for DHBs, PHOs and clinicians to discuss diabetes services and share innovations, updates and challenges to the sector. The Ministry has recently delivered a two-day long term conditions conference (*Shifting Care Closer to Home: How do we Transform?*) which was held 27–28 February 2018. Diabetes featured on the programme of the conference.
6. In February 2018, the Ministry of Health published a Consensus Statement on *Cardiovascular Disease Risk Assessment and Management for Primary Care* to update and refresh the CVD guidelines in the *New Zealand Primary Care Handbook 2012*. For Māori, Pacific and South-Asian populations, and individuals with known significant CVD risk factors, screening should now begin at age 30 years for men and 40 years for women, 15 years earlier than other populations. There is an increased emphasis on diabetes in the Consensus Statement, specific risk calculations for diabetes and clear updated advice on management.
7. In 2016 the Ministry released the *Diabetic Retinal Screening, Grading, Monitoring and Referral Guidance*<sup>6</sup>, which provides an update to the previous guidelines on diabetic retinal screening (2006, updated 2008). The guidance represents a statement of best practice, based on evidence and expert consensus, and is intended to inform and guide the delivery of a nationally consistent retinal screening programme. Additional guidance on chronic kidney disease and gestational diabetes has been published in collaboration with the relevant teams within the Ministry.
8. Before the diabetes plan, a *More Heart and Diabetes Checks* health target was launched in 2012, and ran until July 2016<sup>7</sup>. The goal was for 90 percent of people in specified age and ethnicity cohorts to have their cardiovascular risk assessed in the past five years. The check includes a risk assessment (CVDRA) and a blood test for diabetes (HbA1c) delivered in primary care settings. Attaining this health target has meant that more people are aware of their risk, with some making appropriate health behaviour changes to reduce that risk. Additionally, people with undiagnosed diabetes have been identified and should now be receiving optimised care.
9. The Ministry holds a contract with Diabetes New Zealand that represents and supports people with diabetes. Diabetes New Zealand provides health promotion activities and access to information

<sup>6</sup> <http://www.health.govt.nz/publication/diabetic-retinal-screening-grading-monitoring-and-referral-guidance>

<sup>7</sup> <http://www.health.govt.nz/publication/more-heart-and-diabetes-checks-evaluation>



and resources to support and promote better understanding of people with diabetes, including maintenance of the Diabetes New Zealand website and provision of an 0800 information line. It also leads initiatives and advocates for people with diabetes to enhance self-management. The Ministry diabetes team is working with Diabetes New Zealand to coordinate resources and information and improve access for hard to reach populations.

10. The Ministry team has met with Brandon Orr-Walker, chairperson of the New Zealand Society for the Study of Diabetes (NZSSD). NZSSD is committed to working with the Ministry to improve coordination and services for people with diabetes.

### Projects

11. A two-year community-based project to raise awareness of risk factors for diabetes and CVD in rural communities with low levels of primary care engagement has been evaluated. Led by Dr Tom Mulholland and the Healthy Families teams, the project featured: a mobile health service offering free opportunistic testing; community speaking engagements; workshops for healthcare practitioners; and health promotion activities via social media. The evaluation showed that just over 1,000 people were tested at the mobile clinics, 32% of whom had an HbA1c that signalled they were at high risk of diabetes. A follow-up survey of 102 people at risk of diabetes revealed that, after three months, 46 percent had talked to a doctor about their diabetes risk. The evaluation also concluded that social media was an effective way to communicate healthy lifestyle messages with large numbers of people.
12. A stocktake of consumer-focused diabetes awareness resources used across New Zealand was completed in 2016. An advisory group reviewed the findings and made recommendations on approaches to communicate information on diabetes, healthy eating and physical activity. A final report summarising findings of the stocktake and recommendations was received in July 2017. The report recommended a multi-platform awareness-raising campaign embedded in behaviour change theory, increased digital content and varied messages to meet the needs of a range of users. The recommendations will inform and support the ongoing work of the Ministry.
13. We are identifying the support needs of young people (and their carers) with type 1 diabetes. Exploratory work is being conducted by means of: an online survey for young people with type 1 and their carers; interviews with key informants, such as clinicians and diabetes support agencies; a literature review; and focus groups with young people with type 1 diabetes. Preliminary findings have revealed that support services vary significantly across the regions, and that access to social or emotional support is equally important as clinical support.
14. In a project delivered by Compass Health PHO, 206 people at risk of developing diabetes or heart disease were referred from general practices to enrol in either a three-month or six-month commercial weight loss programme (Weight Watchers). An evaluation report showed that at follow up, which was conducted three to six months following completion of the programme, participants' average weight loss was 4.2kg. Participants reported that meeting with a practice nurse provided them with support and motivation to engage with the weight management programme, and the programme was helpful in improving participants' understanding of their own health and ways they could decrease their risk of developing diabetes. Approximately one third of those who enrolled in the Weight Watchers programme did not complete it.
15. We have subsequently contracted with Compass Health to further examine approaches to weight management for adults in primary practice. This will address: routine weight monitoring for adults attending general practice; trialling a tool to facilitate weight management conversations with patients; and follow-up of patients in the Weight Watchers study.
16. A team-based weight loss competition for Maori and Pacific peoples living in Northland, Manawatu and Auckland is being trialled by Massey University's School of Public Health. Seven teams of seven people at risk of developing type 2 diabetes or CVD participated in the WEHI trial. The teams received information on how to lose weight and earned points for achieving daily and weekly goals aimed at increasing physical activity and adopting healthier eating habits. The programme will provide much-needed information to design interventions and future trials for obesity.



prevention and/or treatment. Results, including changes in participants' weight, HbA1c and eating and dieting habits, will be made available in April 2018.

17. The Ministry supported a randomised controlled trial to evaluate the effectiveness of a text message self-management programme for blood glucose (SMS4BG), for adults with poorly controlled diabetes. The programme was developed by the National Institute for Health Innovation in conjunction with Waitemata DHB and is designed to increase motivation for good blood glucose control. The text messages provide diabetes education and information to support behaviours required for successful diabetes self-management with modules tailored to individual patients. The provisional results at nine months showed a small but significant decrease in HbA1c in the intervention group and also improved foot care behaviour, perceived diabetes support and quality of life. Participants found SMS4BG to be culturally appropriate and it had high levels of satisfaction and acceptability amongst Māori and Pacifica participants. An economic analysis and investigation of potential implementation methods and alignment with other e-health text messaging programmes are planned.
18. The Ministry funded two projects that aimed to improve access to mental health services for people with poorly controlled diabetes and mild to moderate mental health issues. One was based in Northland, and another in Tairāwhiti. An evaluation report concluded that many whānau did not fully understand their diabetes. The interventions that were most effective in improving wellbeing and diabetes control were those that focused on wellbeing, resilience building and holistic support. There is great potential for non-clinical roles such as kaiāwhina to provide the outreach services and time required to assess whānau understanding of their diabetes, their needs and help develop practical solutions. They can also support whānau to build confidence in engaging with clinical staff and managing their diabetes. The Ministry is working closely with Careerforce and partner agencies on implementation of the Kaiāwhina Workforce Action Plan.
19. The Ministry funded the development of up-to-date electronic clinical decision support tools to support health professionals managing important areas for patients with diabetes in primary care settings. Screening tools for the diabetic foot and chronic kidney disease provide standard treatment suggestions and appropriate referral documents, and link to patient support and advice.



## Appendix 2: Progress against the identified measures

1. The diabetes plan included nine measures that were developed to track progress towards improving health outcomes for people with diabetes. These measures are focused on: measuring a reduction in the personal burden for people with diabetes; provision of consistent services across the country; and a reduction in the cost of type 2 diabetes. Several of these have required extensive and continuing work to develop meaningful data.
2. Progress against these measures has been summarised below, and more detailed data tables are included in Appendix 3.

Measure	Progress
1. A 20 percent reduction in complications and disability experienced by people with diabetes under the age of 75 years by 2020; with a 25–30 percent reduction for high risk population groups	Data on amputations and renal replacement in people with diabetes has been provided for measures 2 and 3 (see below).
2. Reduce the rate of amputations per 1000 people with diabetes by 20 percent from that over 2010–14 by 2019, and by 30 percent for Māori and Pacific peoples	<p>Between 2011–2016, the rate of amputations per 1,000 people with diabetes has reduced by 28 percent for Indian people, and by 10 percent for Māori. The rate has remained relatively stable for Pacific people and European/Other. The total number of amputations over this period is trending upwards for all ethnicities except Indian.</p> <p>The total number of major amputations (above-knee and below-knee) has remained relatively stable between 2011–2016 while diabetes prevalence has increased, thus giving a progressively reducing rate. The number of minor amputations has risen, though this is roughly in proportion with the increase in diabetes prevalence. The proportion of major to total amputations has reduced progressively from 34 to 28 percent. See Tables 1 and 2 and Figure 1 in Appendix 3.</p>
3. Reduce the rate of renal replacement per 1000 people with diabetes by 20 percent from that over 2010–14 by 2019, and by 30 percent for Māori and Pacific peoples	People with diabetes account for just over half of all people having renal replacement therapy (RRT). Between 2010 and 2016, the rate of RRT per 1,000 people with diabetes has reduced by 28 percent. See Table 3 and Figure 2 in Appendix 3.
4. A 20 percent decrease in the proportion of people with HbA1c levels >100, by 2020, with better improvement for high-risk population groups	Between Quarter 2 2016/17 and Quarter 2 2017/18, the proportion of people with HbA1c $\geq 101$ mmol has not changed substantially. This is true across all ethnic groups. See Table 4 in Appendix 3.
5. By 2020, 85 percent of people with diabetes will participate in an annual review across all population groups	Data received from all DHBs for Quarter 2 2017/18 shows that an average of 87 percent of the total population of people with diabetes nationwide had an HbA1c result recorded within the past 12 months. This represented an average of 81 percent, 82 percent and 89 percent for Māori, Pacific and Other ethnicities, respectively. See Table 5 in Appendix 3.



6. A 10 percent reduction in the proportion of premature mortality (at < 75 years) due to diabetes by 2019, with a 20 percent decline for Māori and Pacific peoples. This is to be replaced when available by life expectancy and DALY targets

Table 6 shows that diabetes was responsible for an average of 2,147 deaths per year in 2013–2015. This accounts for 31 percent of all deaths occurring among people living with diabetes. This proportion varies from 64 to 72 percent of people living with diabetes aged 25–59 years, and then declines steadily down to 12 percent of deaths in the 85–89 year age group. Of the 2,147 deaths attributable to diabetes, around 61 percent were premature (aged less than 75 years at the time of death). Approximately 29 percent of diabetes-related deaths occurred in the 'working age' population aged 25–64 years. Mortality data from 2012 to 2015 shows that overall, diabetes accounts for around 7 percent of all adult deaths in New Zealand.

According to 2013–2015 data, at age 25 years, the life expectancy for Māori and non-Māori people with diabetes is 45 years and 53 years, respectively. This compares with a life expectancy of 55 years and 59 years for Māori and non-Māori people who do not have diabetes, respectively. See Table 7 in Appendix 3.

Māori and Pacific people aged 40–70 years who have diabetes are five to seven times more likely than European/Other to die from a diabetes-related cause. See Table 8 in Appendix 3.

7. By 2020 DHBs will have implemented quality standards for diabetes care

All DHBs report six-monthly on progress made towards self-assessing diabetes services against the Quality Standards for Diabetes Care. As at Quarter 2 2017/18, 19 DHBs have completed their stocktake against the Quality Standards, and a further DHB is currently completing their stocktake. The most common services that DHBs have chosen to prioritise in their upcoming work programmes are: podiatry, self-management education and retinal screening.

The Ministry diabetes team has asked all DHBs to review and update their self-assessment against the Quality Standards by end of April 2018, to mark the halfway point of implementing the diabetes plan. This information will be used to generate a national picture of diabetes services and indicate future direction of improvement initiatives.

8. Reduce prevalence by a 20 percent reduction in the rate of increase of new cases of type 2 diabetes, by 2020; with a faster rate of reduction for high-risk population groups (30 percent for Māori and Pacific)

VDR data from end-2016 shows that the prevalence of diabetes has continued to increase annually across all ethnic groups. Data on the rates of prevalence show that the increase in prevalence has progressively slowed since 2010. While this is encouraging, it is too soon to claim a halt in the rising prevalence. See Tables 9 and 10 in Appendix 3.

9. Reduce the rate of hospital admissions primarily due to diabetes (per 1000 people with diabetes) by 20 percent from that in 2014, and by 30 percent for Māori and Pacific peoples – by 2019

Since 2014/15, the total number of hospital admissions primarily due to diabetes is trending downwards. This is apparent in the overall rate of admissions per 1,000 people with diabetes and for Pacific people. For Māori the rate of admissions per 1,000 people with diabetes has remained stable. See Table 11 in Appendix 3.



### Appendix 3: Data tables to show progress against the measures in the diabetes plan

Note: The following data provides a snapshot of figures over time and provides a measure of progress since the launch of Living Well with Diabetes. Most of the data is updated annually, at year end. Updated data will be provided in subsequent health reports when available.

**Table 1: Publicly funded discharges that contain a diabetes-related amputation procedure by ethnicity and year of discharge, 2011–2016**

Prioritised ethnicity	Year of discharge					
	2011	2012	2013	2014	2015	2016
European/Other	358	406	454	431	445	438
Rate per 1,000 people with diabetes	2.6	2.8	3.1	2.8	2.9	2.8
Indian	13	15	11	11	18	13
Rate per 1,000 people with diabetes	1.2	1.3	0.9	0.8	1.2	0.9
Maori	127	153	125	122	137	146
Rate per 1,000 people with diabetes	4.4	5.0	3.8	3.6	3.8	4.0
Pacific People	61	56	67	70	61	78
Rate per 1,000 people with diabetes	2.6	2.2	2.5	2.4	2.0	2.5
Total	559	630	657	634	661	675
Rate per 1,000 people with diabetes	2.8	3.0	3.0	2.8	2.8	2.8

Note: Diabetes related amputation procedures are only counted if the discharge contains the procedures listed in table 2 and a diagnosis of diabetes mellitus. Further to this, procedures are not counted if the discharge contains any diagnosis of trauma or a diagnosis of lower limb cancer.

**Table 2: Publicly funded diabetes-related amputation procedures by clinical code and year of discharge 2011–2016**

Amputation type	Year of discharge					
	2011	2012	2013	2014	2015	2016
Amputation of toe	223	311	315	315	335	339
Amputation of toe including metatarsal bone	203	218	270	212	235	244
Disarticulation through ankle						1
Amputation of ankle through malleoli of tibia and fibula	0	1	1	0	0	0
Midtarsal amputation	6	8	10	13	9	7
Transmetatarsal amputation	30	23	31	25	44	39
Amputation above knee	87	105	107	94	95	102
Disarticulation at knee	2	1	2	1	3	1
Amputation below knee	143	138	140	149	127	131
Amputation at hip	0	2	0	0	1	0
Hindquarter amputation	1	0	0	0	0	0
Disarticulation through toe	5	2	1	0	0	1
Total	700	809	877	809	849	865

Notes: Diabetes related amputation procedures are only counted if the discharge contains the procedures listed above and a diagnosis of diabetes mellitus. Further to this, procedures are not counted if the discharge contains any diagnosis of trauma or a diagnosis of lower limb cancer.

Multiple amputations occurring within the same hospital discharge are counted each time.

Source: NMDS



Figure 1: Rates of total, minor and major amputations in people with diabetes, 2011–2016

Amputation rates - total, minor and major, 2011-2016

Total procedures as a percentage of people with diabetes

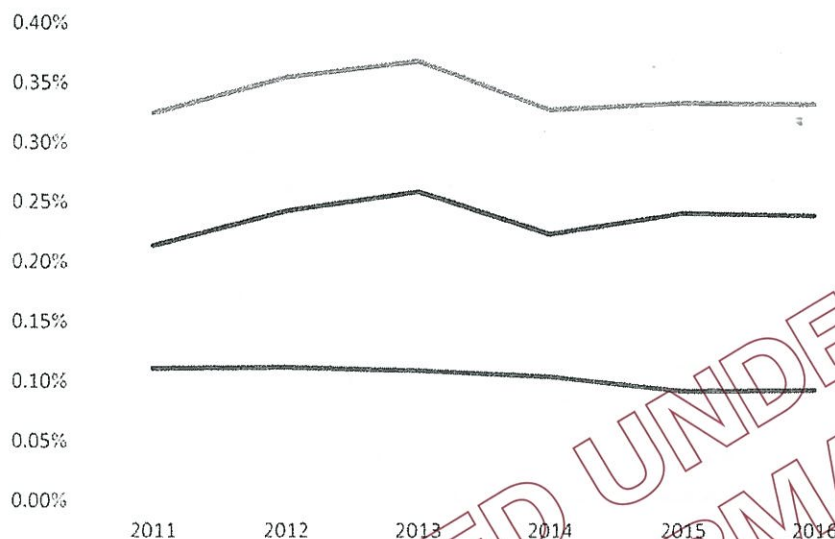


Table 3: Rates of renal replacement therapy (RRT) in people with and without diabetes, 2010–2016

	2010	2011	2012	2013	2014	2015	2016
New cases of RRT in people with diabetes	287	241	296	313	332	290	265
New cases of RRT in people without diabetes	228	247	224	243	220	237	268
Total	515	488	520	556	552	527	533
Rate per 1,000 people with diabetes	1.5	1.2	1.4	1.4	1.5	1.2	1.1

Source: ANZDATA 2017 (accessed January 2018)

Figure 2: Rates of renal replacement therapy per 1,000 people with diabetes, 2010-2016

CKD new patient incidence rate NZ 2010-2016

Rate per 1,000 people with diabetes

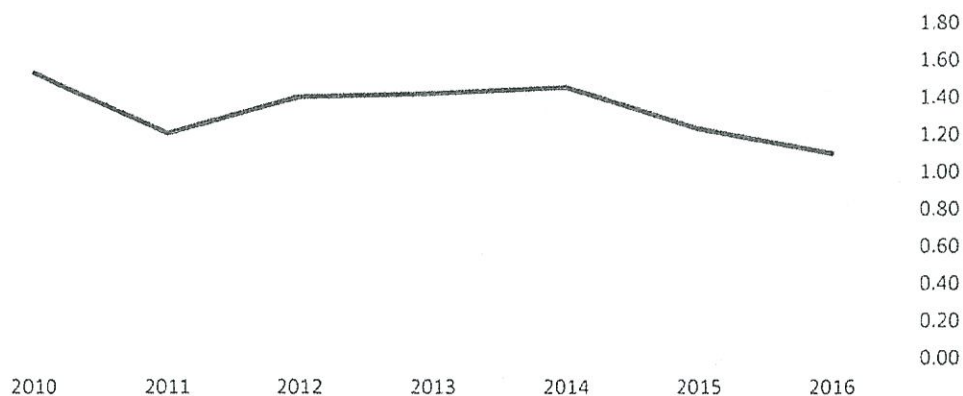




Table 4: Proportion of people with HbA1c  $\geq 101$  mmols in 2016/17 and 2017/18, by ethnicity

Ethnicity	2016/17 Quarter 2				2017/18 Quarter 2			
	Proportion of people in each HbA1c category				Proportion of people in each HbA1c category			
	$\leq 64$ mmols	65-80 mmols	81-100 mmols	$\geq 101$ mmols	$\leq 64$ mmols	65-80 mmols	81-100 mmols	$\geq 101$ mmols
European/Other	54%	10%	4%	2%	54%	13%	5%	1%
Māori	44%	11%	8%	3%	43%	14%	11%	4%
Pacific	41%	13%	11%	2%	44%	15%	13%	3%
Total	51%	11%	6%	2%	51%	13%	7%	2%

Notes: 2016/17 Quarter 2 data for  $\leq 64$  mmols has been provided by all 20 DHBs, data for HbA1c  $\geq 65$  mmols has been provided by 18 of 20 DHBs.

The following data collection issues have been reported by DHBs: unable to provide results from all PHOs, only able to report on patients who have had an annual review, only providing data for the current month rather than for the quarter/year to date, and other data integrity issues.

Source: 2016/17 Quarter 2 HbA1c report and 2017/18 Quarter 2 HbA1c report.

Table 5: Proportion of people with diabetes who had an HbA1c test between 1 January 2017 and 31 December 2017, by ethnicity and DHB of domicile

DHB	Ethnicity (%)			Total
	Māori	Pacific	Other	
Auckland	77	77	80	79
Bay of Plenty	88	75	93	91
Canterbury	88	86	89	89
Capital and Coast	90	90	91	91
Counties Manukau	98	97	94	96
Hawkes Bay	60	49	73	67
Hutt Valley	80	86	85	84
Lakes	88	82	86	86
MidCentral	86	88	91	90
Nelson Marlborough	53	52	75	73
Northland	40	41	52	46
South Canterbury	86	111	141	136
Southern	66	64	69	69
Tairāwhiti	97	102	97	97
Taranaki	95	93	95	95
Waikato	90	89	100	96
Wairarapa	87	86	93	91
Waitemata	68	79	76	75
West Coast	100	100	100	100
Whanganui	87	92	91	90
All DHBs	81	82	89	87

Source: 2017/18 Quarter 2 HbA1c report.

Table 6: Rates of diabetes-related deaths and deaths in people with diabetes, New Zealand 2013-2015

Age	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+	Total
DID	5	12	17	36	87	169	257	394	619	783	1,034	1,247	1,265	992	6,919
DRD	4	9	12	25	61	113	164	234	332	361	378	309	148	-2	2,147
%	72	72	72	71	69	67	64	59	54	46	37	25	12	0	31

Notes: DID = number of deaths in people with diabetes, DRD = number of deaths attributable to diabetes

Source: Diabetes Surveillance 2012-2014 and 2013-2015: Mortality, Ministry of Health



**Table 7: Diabetes-related deaths rate ratios (RR). Comparison of ethnic groups with the European/Other category, 2013-2015**

Age	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90 +
Asian	0.4	0.2	0.4	0.5	0.9	0.8	1.1	1.0	1.1	0.9	1.1	1.0	1.3	1.2
Maori	4.3	5.0	4.8	7.8	5.5	6.7	4.3	6.0	5.2	4.1	3.3	2.4	1.8	1.4
Pacific	2.7	2.5	5.7	9.2	7.1	7.6	5.6	6.8	6.4	5.2	4.0	3.0	2.3	2.1

Notes: Rate ratio = ethnicity rate of diabetes-related deaths / European or Other rate of diabetes-related deaths

All rates are per 100,000 people

Source: Diabetes Surveillance 2012–2014 and 2013–2015: Mortality, Ministry of Health

**Table 8: Life expectancies for VDR and non-VDR populations at age 25 years, 2013–2015**

Ethnicity	Life expectancy at age 25 (years)		
	NonVDR	VDR	Difference
Maori	54.6	44.8	9.8
Non-Maori	58.8	52.9	5.9

Note: VDR = number of people with diabetes as estimated by the Virtual Diabetes Register

Source: Diabetes Surveillance 2012–2014 and 2013–2015: Mortality, Ministry of Health

**Table 9: Number of people on the Virtual Diabetes Register (VDR) by ethnic group, 2010–2016**

Year	Maori	Pacific people	Indian	European/Other	Total
2010	27,257	22,143	10,086	128,374	187,860
2011	29,003	23,799	10,981	136,452	200,235
2012	30,827	25,649	11,924	143,191	211,591
2013	32,634	27,296	12,764	148,172	220,866
2014	34,355	29,001	13,750	151,684	228,790
2015	35,769	30,445	14,632	155,227	236,073
2016	36,978	31,480	15,383	157,622	241,463

Note: People that were either not enrolled in a PHO or were not alive, as at 31/12 of the relevant year, have been excluded.

Source: VDR Dec 2010–2016 (v686)

**Table 10: Rate of diabetes per 100 people, by ethnicity, 2010–2016**

Ethnicity	Year						
	2010	2011	2012	2013	2014	2015	2016
European/Other	2.6	2.7	2.8	2.8	2.8	2.8	2.8
Indian	9.2	9.5	9.7	9.9	10.1	10.1	10.1
Maori	6.2	6.4	6.6	6.8	6.9	7.0	6.9
Pacific	9.6	9.9	10.3	10.7	11.1	11.3	11.3
Total	3.3	3.5	3.6	3.7	3.7	3.8	3.8
Increase year-on-year	-	0.2	0.1	0.1	0	0.1	0

Note: Rate has been standardised using the WHO population and is per every 100 people.

Source: VDR Dec 2010–2016, NHI



Table 11: Number of publicly funded hospital discharges due to diabetes mellitus by prioritised ethnic group, 2014/15–2016/17

Year	Maori	Pacific	Asian	European / other	Total
2014/15	1,277	606	152	4,057	6,092
Rate per 1,000 people with diabetes	37.2	20.9	11.1	26.7	26.6
2015/16	1,274	638	152	3,993	6,057
Rate per 1,000 people with diabetes	35.6	21.0	10.4	25.7	25.7
2016/17	1,371	554	132	3,800	5,857
Rate per 1,000 people with diabetes	37.1	17.6	8.6	24.1	24.3

Notes: Discharges had a primary diagnosis of diabetes mellitus.

As of 1 July 2014 diabetes mellitus did not need to be sequenced as the primary diagnosis. This resulted in a notable decrease in recorded hospitalisations between 2013/14 and 2014/15. Due to this administrative trend, hospital discharges are shown by financial year, but the VDR population data used to calculate rates is only available by calendar year. The VDR year to produce rates is shown for each financial year in the table above. The VDR population excludes both people that weren't enrolled in a PHO and were dead as at 31st December of each VDR year.

Source: National Minimum Dataset (NMDS) and Virtual Diabetes Register (VDR)



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Security classification: In-Confidence

Quill record number: N/A  
 File number: AD62-14-2018  
 Action required by: routine

## Progress update on implementing *Living Well with Diabetes: A plan for people at high risk of or living with diabetes 2015-2020* – September 2018

To: Hon Dr David Clark, Minister of Health

### Purpose

This report provides you with a summary of progress towards implementing *Living Well with Diabetes: A plan for people at high risk of or living with diabetes 2015-2020* (the diabetes plan). This covers progress made in the last six months, since the last update report in March 2018 (HR 20171873 refers).

### Key points

- The prevalence of diabetes in total numbers continued to increase in New Zealand between 2010 and 2017, overall by about 30 percent. However, the rate of increase has slowed over the past few years.
- Since 2014/15 the rate of diabetes in terms of the WHO standardised population<sup>1</sup> has plateaued in all ethnicities.
- As at the end of 2017, an estimated 245,680 people in New Zealand had diabetes, as modelled by the Virtual Diabetes Register (VDR).
- To mark the halfway point of the diabetes plan, all but one district health board (DHB) completed a self-assessment of services against the Quality Standards for Diabetes Care. Results vary widely, with adequacy and equity of services consistently ranking below quality of services. Priority areas for the next stages of improvement have been identified by DHBs as a result of this work.
- The Ministry diabetes team has met with 19 of 20 DHBs since mid-2016 to discuss their progress towards implementing the diabetes plan.
- There has been a dramatic improvement in the ascertainment of diabetes in almost all primary health organisations (PHOs) and DHBs, with practice register numbers closely aligned to VDR predictions. This is an essential prerequisite for systematic quality care, though in many DHBs there is evidence of 10 percent or more of the diabetes population not receiving regular care.
- Most DHBs continue to work towards improving collaboration and integration. There is some evidence of greater focus on unstable diabetes and the need to improve HbA1c in vulnerable groups, though the effort varies across DHBs.

<sup>1</sup> The WHO age-corrected standard population removes the effect of different aged populations on disease prevalence that show significant changes with age - as with diabetes. It is used to compare countries with different age structures and where a population age profiles are changing because of ageing, immigration and differential birth rates.

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	Sue Riddle, Manager, CVD Diabetes Long Term Conditions, Population Health, Population Health and Prevention	s 9(2)(a)



**Progress update on implementing *Living Well with Diabetes: A plan for people at high risk of or living with diabetes 2015-2020* – September 2018**

**Recommendations**

This report is for your information only and does not request any decisions.

Dr William Rainger  
Acting Deputy Director-General  
Population Health and Prevention

Minister's signature:

Date:

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## Update on the implementation of *Living Well with Diabetes* – September 2018

1. At the end of 2017, an estimated 245,680 people in New Zealand had diabetes (Virtual Diabetes Register 2017).<sup>2</sup>
2. Over the period 2010–2017 the prevalence of diabetes has increased by 31 percent nationwide (ranging from 10 to 48 percent across DHBs and highest in Counties Manukau and Capital & Coast DHBs).
3. Since 2010 there has been a gradual slowing of the rate of increase of prevalence, with a plateau reached over the past two-to-three years when expressed as the WHO corrected population rate. This applies to total prevalence, and also for Māori, Pacific and Indo-Asian populations as well as European/Other (Figure 3 in Appendix 1).
4. In their recent self-assessment of services against the 20 *Quality Standards for Diabetes Care* (the quality standards), most DHBs' self-rated scores for adequacy/equity of service were consistently lower than their scores for quality of service. This suggests that, while most diabetes services nationwide are of good quality, they may not be keeping up with the demand. The availability of diabetes services and capacity of the workforce at both primary and specialist level may be affected as a result.

### We are three years into the implementation of *Living Well with Diabetes*

5. *Living Well with Diabetes: A plan for people at high risk of or living with diabetes 2015–2020* (the diabetes plan)<sup>3</sup> was launched in October 2015. It provides a medium-term plan for tackling diabetes, and has a vision that all New Zealanders with diabetes, or at risk of developing type 2 diabetes, are living well and have access to high-quality, people-centred health services.
6. The diabetes plan focuses on supporting people to manage their condition themselves, with the priority areas of action to:
  - a. prevent high-risk people from developing type 2 diabetes
  - b. enable effective self-management
  - c. improve quality of services
  - d. detect diabetes early and reduce the risk of complications
  - e. provide integrated care
  - f. meet the needs of children and adults with type 1 diabetes.
7. In 2013/14, the Ministry released the *Quality Standards for Diabetes Care* and an accompanying toolkit.<sup>4,5</sup> The 20 quality standards provide guidance for the health sector to support planning of high-quality clinical services and comprehensive patient-centred care. The quality standards and toolkit complement the diabetes plan and provide a benchmark for DHBs, PHOs and general practices.

### Progress against the identified measures in the diabetes plan

8. The diabetes plan included nine measures that were developed to track progress towards improving health outcomes for people with diabetes. These measures are focused on: measuring a reduction in the personal burden for people with diabetes; provision of consistent services across the country; and a reduction in the cost of type 2 diabetes. Several of these have required extensive and continuing work to develop meaningful data.

<sup>2</sup> <https://www.health.govt.nz/our-work/diseases-and-conditions/diabetes/about-diabetes/virtual-diabetes-register-vdr>

<sup>3</sup> <http://www.health.govt.nz/publication/living-well-diabetes>

<sup>4</sup> <http://www.health.govt.nz/our-work/diseases-and-conditions/diabetes/quality-standards-diabetes-care>

<sup>5</sup> <https://www.health.govt.nz/publication/quality-standards-diabetes-care-toolkit-2014>



9. Progress against these measures has been summarised below, and more detailed data tables are included in Appendix 1.
- a. **Measure: A 20 percent reduction in complications and disability experienced by people with diabetes under the age of 75 years by 2020; with a 25–30 percent reduction for high risk population groups.**  
 Progress: Data on amputations and renal replacement in people with diabetes has been provided for measures b and c (see below). We have commenced work exploring the development of new measures for the progress of diabetic eye disease and foot disease. Results are likely to be available in 12–18 months.
  - b. **Measure: Reduce the rate of amputations per 1,000 people with diabetes by 20 percent from that over 2010–14 by 2019, and by 30 percent for Māori and Pacific peoples.**  
 Progress: Between 2011 and 2017 the rate of amputation procedures per 1,000 people with diabetes has reduced by 33 percent for Indian people. The rate has increased by 28 percent for European/Other and remained relatively stable for Māori and Pacific peoples.  
 The total number of amputations has increased between 2011 and 2017, particularly for minor amputations, which could be indicative of earlier intervention. Major amputations have remained static despite the increase in number of people with diabetes. See Tables 1 and 2 and Figure 1 in Appendix 1.
  - c. **Measure: Reduce the rate of renal replacement per 1,000 people with diabetes by 20 percent from that over 2010–14 by 2019, and by 30 percent for Māori and Pacific peoples.**  
 Progress: People with diabetes account for approximately half of all people starting renal replacement therapy (RRT). Between 2010 and 2016 the rate of RRT initiation per 1,000 people with diabetes has reduced by 20 percent. See Table 3 and Figure 2 in Appendix 1.
  - d. **Measure: A 20 percent decrease in the proportion of people with HbA1c levels > 100, by 2020, with better improvement for high-risk population groups.**  
 Progress: Between Quarter 2 2016/17 and Quarter 4 2017/18, the proportion of people with HbA1c ≥ 101 mmol/mol has not changed substantially overall. However, for Pacific peoples, this has increased from 2 percent to 6 percent. See Table 4 in Appendix 1.
  - e. **Measure: By 2020, 85 percent of people with diabetes will participate in an annual review across all population groups.**  
 Progress: Data was provided by 19 DHBs for Quarter 4 2017/18, which shows an average of 83 percent of the national population with diabetes had an HbA1c result recorded within the past 12 months. This was a small decrease from the data received for Quarter 2, though this may be due to some inaccuracies in data reporting. See Table 5 in Appendix 1.
  - f. **Measure: A 10 percent reduction in the proportion of premature mortality (at < 75 years) due to diabetes by 2019, with a 20 percent decline for Māori and Pacific peoples. This is to be replaced when available by life expectancy and DALY targets.**  
 Progress: Table 6 shows that diabetes was responsible for an average of 2,058 deaths per year in the period 2014–2016. This accounts for 29 percent of all deaths occurring among people living with diabetes. This proportion varies from 64 to 73 percent of people living with diabetes aged 25–59 years, and then declines steadily down to 8 percent of deaths in the 85–89 year age group. Of the 2,058 deaths attributable to diabetes, around 64 percent were premature (aged less than 75 years at the time of death). Approximately 31 percent of diabetes-related deaths occurred in the ‘working age’ population aged 25–64 years. Mortality data from 2014 to 2016 shows that overall, diabetes accounts for around 7 percent of all adult deaths in New Zealand. See Tables 6 and 7 in Appendix 1.
  - g. **Measure: By 2020 DHBs will have implemented quality standards for diabetes care.**  
 Progress: To mark the halfway point of implementing the diabetes plan, the Ministry diabetes team asked all DHBs to review and score their services against the Quality Standards for Diabetes Care in April 2018. This was completed by 19 DHBs, and the remaining DHB will undertake this by the end of the year. All DHBs reported they are progressing with



implementing the quality standards, and they have identified their highest priority quality standards. See points 9–14 of this health report for more detail.

- h. **Measure: Reduce prevalence by a 20 percent reduction in the rate of increase of new cases of type 2 diabetes, by 2020; with a faster rate of reduction for high-risk population groups (30 percent for Māori and Pacific).**

Progress: VDR data for 2010–2017 shows that total diabetes prevalence has continued to increase. However, the rate corrected to a WHO standardised population has plateaued since 2014/15. This is true for all ethnicities. See Tables 8 and 9 and Figure 3 in Appendix 1.

- i. **Measure: Reduce the rate of hospital admissions primarily due to diabetes (per 1,000 people with diabetes) by 20 percent from that in 2014, and by 30 percent for Māori and Pacific peoples – by 2019.**

Progress: Since 2014/15 the total number of hospital admissions primarily due to diabetes has shown little change. The total rate of admissions per 1,000 people with diabetes has decreased by 4 percent. For Māori and Pacific peoples the rate of admissions per 1,000 people with diabetes has remained stable. See Table 10 in Appendix 1.

### DHB self-assessments against the quality standards

10. To mark the halfway point of the diabetes plan and to review progress against its aims, all DHBs were asked to self-assess their services against the quality standards in early 2018. They were asked to provide ratings for both quality and adequacy/equity of service provision for each of the standards and to identify priority action areas for local improvement as a result of the self-assessment.
11. A total of 19 DHBs have responded to our request to complete a self-assessment of services. The one remaining DHB has agreed to undertake the self-assessment by the end of 2018.
12. In almost all DHBs the self-rated scores for equity/adequacy of service provision ranked below that for quality of service, with average scores of 3.2 and 3.7 out of five, respectively. Several DHBs also reported that some specialist services were at or beyond capacity. This may be due to the substantial increase in the total number of people with diabetes over the past 7–10 years and difficulty in meeting demand, which potentially impacts the availability of services such as retinal screening, self-management education and foot care, and places greater demand on general practices.
13. When asked to prioritise the quality standards, DHBs ranked the following as the highest priorities:
  - a. Basic care, self-management and assessment:
    - i. People with diabetes should be assessed for the presence of psychological problems with expert help provided if needed.
    - ii. They should receive high quality structured self-management education that is tailored to their individual and cultural needs. They and their families/whānau should be informed of, and provided with, support services and resources that are appropriate and locally available.
    - iii. They should be offered, as a minimum, an annual assessment for the risk and presence of diabetes-related complications and for cardiovascular risk. They should participate in making their own care plans, and set agreed and documented goals/targets with their health care team.
  - b. Management of diabetes complications
    - i. All people with diabetes should have regular checks of renal function (eGFR) and proteinuria (ACR) with appropriate management and/or referral if abnormal.
    - ii. They should be assessed for the risk of foot ulceration and, if required, receive regular review. Those with active foot problems should be referred to and treated by a multidisciplinary foot care team within recommended timeframes.



- c. Management of diabetes and cardiovascular risk
    - i. Those who do not achieve their agreed targets should have access to appropriate expert help.
  - d. Special groups
    - i. Vulnerable patients, including those in residential facilities and those with mental health or cognitive problems, should have access to all aspects of care, tailored to their individual needs.
14. Other key findings from the self-assessments include:
- a. The best performing and responsive services are those with a high-functioning and integrated leadership group with representation from primary care, PHOs, specialist services including the full multi-disciplinary team, DHB management and consumers.
  - b. Across the country many of the greatest improvements in primary care performance have occurred where the local specialist teams (nurses, SMOs and other disciplines) are directly involved in training and up-skilling the wider primary care team.
  - c. Improvements are evident in many aspects of diabetes care; however, there is less evidence of improved equity outcomes for Māori, Pacific and those living in areas of high deprivation.
  - d. There has been a considerable improvement in the number of people with diabetes who now appear on practice or PHO registers. This suggests that the identification of people with diabetes is close to complete in most DHBs and PHOs.
  - e. There is great potential to use PHO or practice-level data to inform quality improvement at practice and individual patient level. There is currently wide variation in the extent and ways in which this data is used.
  - f. There are a number of emerging clinical areas of particular importance. These include:
    - i. adolescents and young adults (aged 16 to 25 years), especially those transitioning to adult services
    - ii. adults aged 25 to 50 years with type 2 diabetes
    - iii. psychological support for people with diabetes
    - iv. people with early renal disease
    - v. vulnerable older adults living at home or in supervised care.
15. The Ministry diabetes team has written feedback letters to each DHB providing a summary of national results and individualised responses to address areas of interest for each district. All DHBs have been encouraged to share the findings amongst their local diabetes team, alliance or leadership group and to consider these as they develop and enhance services for people with diabetes.
16. The Ministry is exploring ways to support DHBs to address service needs and gaps identified in the self-assessments. This includes facilitating DHB-to-DHB peer relationships and options to connect with other Ministry work programmes. For example, a possible link with the mental health team to support the prioritised quality standard on providing assessment and support for people with psychological problems. A workshop for the sector to review and discuss key findings from the self-assessments is being planned for the next long term conditions conference in February 2019 (refer point 20 below).

### **Implementation of the diabetes plan is variable across the sector**

17. Since March 2018, the Ministry diabetes team has visited two further DHBs and teleconferenced with one where travel was not possible. The team has now met with 19 out of 20 DHBs since mid-2016 to discuss and support the implementation of the diabetes plan. We will visit the final DHB in October 2018. DHB visits have proved invaluable in objectively assessing progress and establishing good working relationships with the sector. There has been a substantial improvement in the quality and completeness of quarterly reports and annual plans.



18. DHB visits and the self-assessments have indicated there continues to be a wide variation across the country in implementing the diabetes plan. Although there is an improved focus on improving services and outcomes for vulnerable groups, there remains an equity gap in terms of measures of care and diabetes-related outcomes for some DHBs. Overall progress in implementing the diabetes plan has been slow for four DHBs in particular.
19. Over the next six months the Ministry plans to work closely with DHBs where challenges implementing the diabetes plan remain. Paper-based reviews to support the higher performing DHBs will continue over 2019. The Ministry will facilitate mechanisms to improve collaboration and integration for DHBs to enable them to meet the objectives of the diabetes plan by 2020.

#### Ministry-led work to support the implementation of the diabetes plan

20. The Ministry diabetes team has reviewed the draft DHB 2018/19 Annual Plans, in which DHBs were asked to identify at least three priority areas for quality improvement in diabetes care and services. A number of DHBs have chosen actions relating to: enhanced screening services (renal, retinal and diabetes distress screening); developing the capability and confidence of the workforce; ensuring people with diabetes attend an annual review; improved models of care for podiatry services; and the provision of diabetes self-management education and dietetic support.
21. In February 2018, the Ministry of Health published a Consensus Statement on Cardiovascular Disease Risk Assessment (CVDRA) and Management for Primary Care to update and refresh the cardiovascular disease (CVD) guidelines in the New Zealand Primary Care Handbook 2012. Work is underway to determine how this will be implemented nationally. The diabetes team acknowledge the clear relationship between diabetes and heart disease and strongly support the implementation of the revised CVDRA guidance.
22. The Ministry's CVD diabetes and long-term conditions team is currently planning a conference on 21–22 February 2019 for DHBs, PHOs and clinicians. This aims to showcase innovative work from stakeholders across the country and focus on operationalising improving equity in health outcomes in the primary and community care sector. The proposed theme is “keeping it real”, aiming to link evidence-based policy and strategy directly with implementation. The conference will include examples of patient-centred services with an emphasis on improving equity. There will be three diabetes-specific sessions. You have agreed to open the conference.
23. Last year we commissioned exploratory work to identify the support needs of young people (and their carers) with type 1 diabetes, with a focus on support needed to enable a seamless transition into self-management of the condition. We have received an evaluation report showing that type 1 diabetes is challenging for young people and their parents/caregivers, though especially for those aged 18 to 20 years as they move out of home and away from paediatric services. Emotional and psychological support becomes increasingly important with age but is not always available. Diabetes services vary across the country, and young people would benefit most from regular face-to-face contact, judgement-free services that assess a young person's holistic wellbeing.

END.



## Appendix 1: Data tables to show progress against the measures in the diabetes plan

**Table 1: Number of diabetes-related amputation procedures by ethnicity and year of discharge, 2011-2017**

Ethnicity	Year of discharge						
	2011	2012	2013	2014	2015	2016	2017
European/Other	440	509	576	532	558	550	653
Rate per 1,000 people with diabetes	3.1	3.5	3.8	3.4	3.5	3.4	4.0
Indian	15	18	28	15	25	19	15
Rate per 1,000 people with diabetes	1.2	1.4	2.0	1.0	1.5	1.1	0.8
Māori	166	204	177	174	184	202	212
Rate per 1,000 people with diabetes	5.4	6.2	5.1	4.7	4.8	5.1	5.2
Pacific People	79	78	96	88	82	93	109
Rate per 1,000 people with diabetes	3.0	2.8	3.2	2.7	2.4	2.7	3.0

Notes: Diabetes related amputation procedures are only counted if the discharge contains the procedures listed in table 2 and a diagnosis of diabetes mellitus. Further to this, procedures are not counted if the discharge contains any diagnosis of trauma or a diagnosis of lower limb cancer.

Rates per thousand people on the VDR, including those unenrolled in a PHO, who were alive at the start and end of the year.

Source: National Minimum Dataset (NMDS), Virtual Diabetes Register (VDR) Dec 2010–2017 (v686)

**Table 2: Publicly funded diabetes-related amputation procedures by clinical code and year of discharge, 2011-2017**

Amputation type	Year of discharge						
	2011	2012	2013	2014	2015	2016	2017
Amputation of toe	223	311	315	315	335	339	399
Amputation of toe including metatarsal bone	203	218	270	212	235	244	302
Disarticulation through ankle	0	0	0	0	0	1	0
Amputation of ankle through malleoli of tibia and fibula	0	1	1	0	0	0	1
Midtarsal amputation	6	8	10	13	9	7	10
Transmetatarsal amputation	30	23	31	25	44	39	39
Amputation above knee	87	105	107	94	95	102	96
Disarticulation at knee	2	1	2	1	3	1	0
Amputation below knee	143	138	140	149	127	130	142
Amputation at hip	0	2	0	0	1	0	0
Hindquarter amputation	1	0	0	0	0	0	0
Disarticulation through toe	5	2	1	0	0	1	0
Total	700	809	877	809	849	864	989

Notes: Diabetes related amputation procedures are only counted if the discharge contains the procedures listed above and a diagnosis of diabetes mellitus. Further to this, procedures are not counted if the discharge contains any diagnosis of trauma or a diagnosis of lower limb cancer.

Multiple amputations occurring within the same hospital discharge are counted each time.

Source: NMDS



Figure 1: Rates of total, minor and major amputations in people with diabetes, 2011-2017

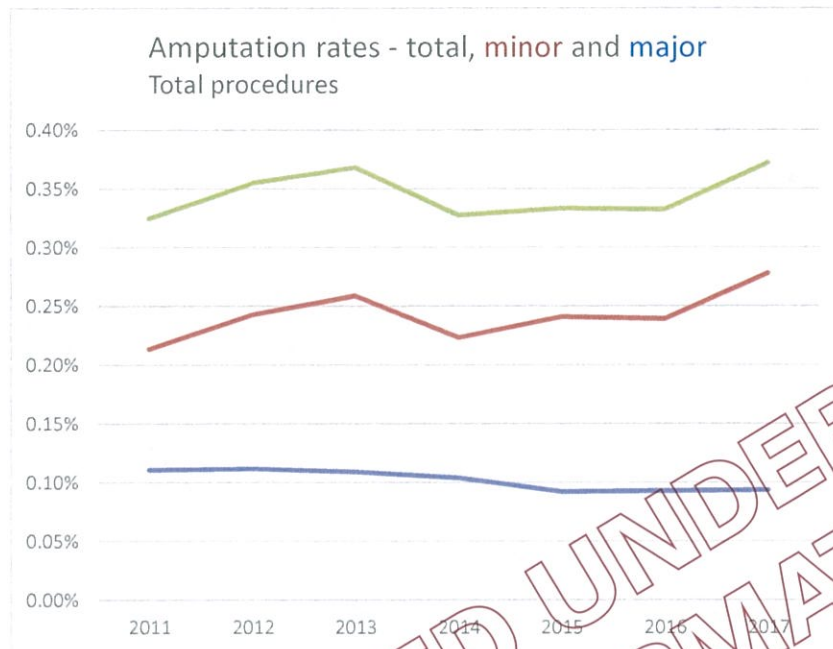
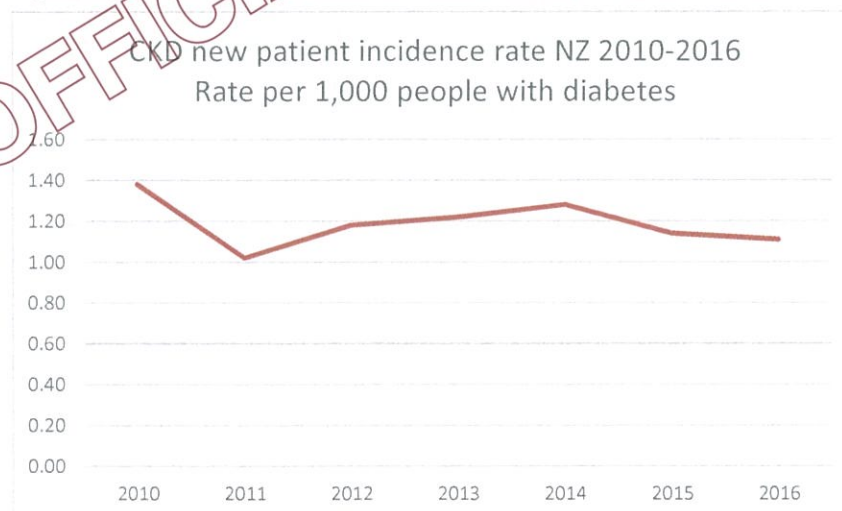


Table 3: Rates of renal replacement therapy (RRT) in people with and without diabetes, 2010–2016

	2010	2011	2012	2013	2014	2015	2016
New cases of RRT in people with diabetes	260	204	249	270	293	269	269
New cases of RRT in people without diabetes	255	281	264	287	262	289	290
Total	515	485	513	557	555	558	559
Rate per 1,000 people with diabetes	1.4	1.0	1.2	1.2	1.3	1.1	1.1

Source: ANZDATA 2017 (accessed June 2018)

Figure 2: Rates of renal replacement therapy (RRT) in people with and without diabetes, 2010–2016





**Table 4: Proportion of people with HbA1c  $\geq 101$  mmols in 2016/17 and 2017/18, by ethnicity**

Ethnicity	2016/17 Quarter 2				2017/18 Quarter 4			
	Proportion of people in each HbA1c category				Proportion of people in each HbA1c category			
	$\leq 64$ mmols	65-80 mmols	81-100 mmols	$\geq 101$ mmols	$\leq 64$ mmols	65-80 mmols	81-100 mmols	$\geq 101$ mmols
European/Other	54%	10%	4%	2%	56%	13%	5%	2%
Maori	44%	11%	8%	3%	46%	15%	10%	5%
Pacific	41%	13%	11%	2%	45%	17%	11%	6%
Total	51%	11%	6%	2%	52%	14%	7%	3%

Notes: 2016/17 Quarter 2 data for  $\leq 64$  mmols has been provided by all 20 DHBs, data for HbA1c  $\geq 65$  mmols has been provided by 18 of 20 DHBs.

The following data collection issues have been reported by DHBs: unable to provide results from all PHOs, only able to report on patients who have had an annual review, data is not restricted to patients within the specified age range, only providing data for the current month rather than for the quarter/year to date, and other data integrity issues.

Source: 2016/17 Quarter 2 HbA1c report and 2017/18 Quarter 4 HbA1c report.

**Table 5: Proportion of people with diabetes who had an HbA1c test between 1 July 2017 and 30 June 2018, by ethnicity and DHB of domicile**

DHB	Ethnicity (%)			Total
	Maori	Pacific	Other	
Auckland	85	86	90	89
Bay of Plenty	75	72	100	91
Canterbury	89	86	90	90
Capital and Coast	93	85	93	92
Counties Manukau	85	84	90	87
Hawkes Bay	64	60	74	69
Hutt Valley	80	86	79	80
Lakes	91	78	95	92
MidCentral	86	90	91	90
Nelson Marlborough	19	19	25	24
Northland	65	70	69	67
South Canterbury	100	100	100	100
Southern	62	61	67	66
Tairāwhiti	Data not provided			
Taranaki	95	90	93	93
Waikato	89	88	99	96
Wairarapa	105	116	99	101
Waitemata	79	86	86	85
West Coast	87	63	83	83
Whanganui	87	92	91	90
All DHBs	81	80	85	83

Note: The following data collection issues have been reported by DHBs: unable to provide results from all PHOs, only able to report on patients who have had an annual review, data is not restricted to patients within the specified age range, only providing data for the current month rather than for the quarter/year to date, and other data integrity issues.

Source: 2017/18 Quarter 4 HbA1c report.

**Table 6: Rates of diabetes-related deaths and deaths in people with diabetes, New Zealand 2014-2016**

Age	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+	Total
DID	7	12	19	37	93	178	259	405	621	814	1098	1287	1319	1058	7207
DRD	5	9	14	27	65	119	165	238	326	360	370	272	106	-17	2058
%	73	73	73	72	70	67	64	59	53	44	34	21	8	-2	29

Notes: DID = number of deaths in people with diabetes, DRD = number of deaths attributable to diabetes

Source: VDR and Mortality collection, 2014-2016; Ministry of Health



**Table 7: Diabetes-related deaths rate ratios (RR). Comparison of ethnic groups with the European/Other category, 2014-2016**

Age	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90 +
Asian	0.3	0.2	0.7	0.4	0.8	0.7	1.0	1.1	1.4	1.1	1.0	1.2	1.9	1.5
Maori	3.2	3.8	6.0	9.2	5.1	7.2	5.5	6.5	5.9	4.5	3.4	2.7	2.0	1.7
Pacific	4.0	3.4	5.2	11.4	7.4	8.5	5.9	7.1	6.5	5.3	4.2	3.4	2.7	2.2

Notes: Rate ratio = ethnicity rate of diabetes-related deaths / European or Other rate of diabetes-related deaths

All rates are per 100,000 population

Source: VDR and Mortality collection, 2014-2016; Ministry of Health

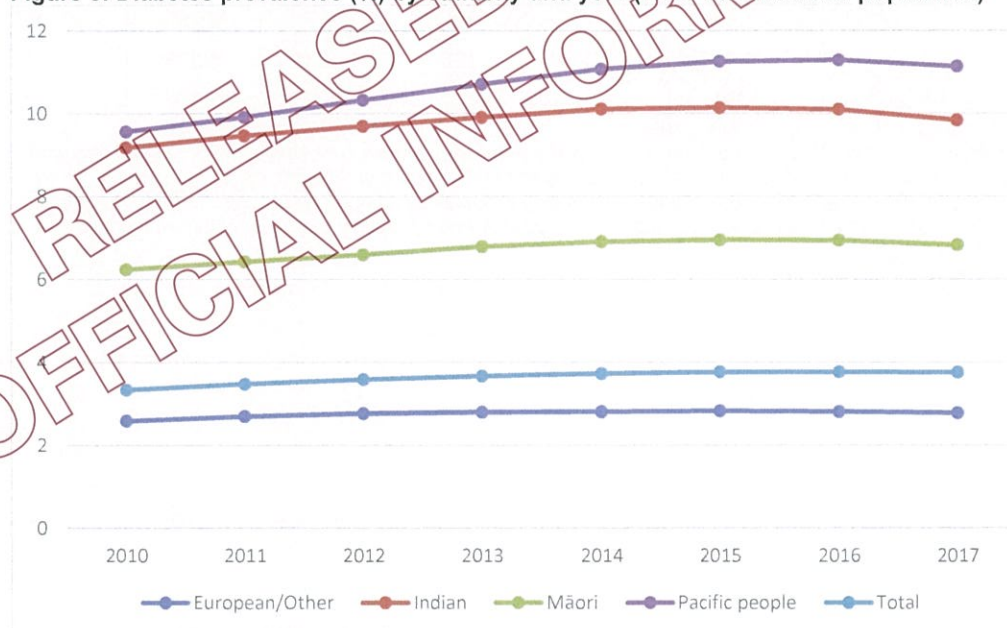
**Table 8: Number of people on the Virtual Diabetes Register (VDR) by ethnic group, 2010-2017**

Year	Maori	Pacific-people	Indian	European/Other	Total
2010	27,257	22,143	10,086	128,374	187,860
2011	29,003	23,799	10,981	136,452	200,235
2012	30,827	25,649	11,924	143,191	211,591
2013	32,634	27,296	12,764	148,172	220,866
2014	34,355	29,001	13,750	161,684	228,790
2015	35,769	30,445	14,632	155,227	236,073
2016	36,978	31,480	15,383	157,622	241,463
2017	38,620	32,406	16,339	158,315	245,680

Note: People that were either not enrolled in a PHO or were not alive, as at 31/12 of the relevant year, have been excluded.

Source: VDR Dec 2010-2017 (v686)

**Figure 3: Diabetes prevalence (%) by ethnicity and year (WHO standardised population)**



Source: VDR Dec 2010-2017 (v686), NHI



**Table 9: Rate of diabetes per 100 people, by ethnicity, 2010-2017**

Ethnicity	Year							
	2010	2011	2012	2013	2014	2015	2016	2017
European/Other	2.6	2.7	2.8	2.8	2.8	2.8	2.8	2.8
Indian	9.2	9.5	9.7	9.9	10.1	10.1	10.0	9.8
Maori	6.2	6.4	6.6	6.8	6.9	6.9	6.9	6.8
Pacific	9.6	9.9	10.3	10.7	11.1	11.3	11.3	11.1
Total	3.3	3.5	3.6	3.7	3.7	3.8	3.8	3.8
Increase year-on-year	-	0.2	0.1	0.1	0	0.1	0	0

Note: rate has been standardised using the WHO population and is per every 100 people

Source: VDR Dec 2010–2017 (v686)

**Table 10: Number of publicly-funded hospital discharges due to diabetes by ethnicity, 2014/15–2017/18**

Year	Maori	Pacific	Indian	European / other	Total
2014/15	1,278	606	152	4,074	6,110
Rate per 1,000 people with diabetes	29.6	17.0	9.7	20.9	24.7
2015/16	1,280	638	152	4,063	6,133
Rate per 1,000 people with diabetes	28.5	17.0	9.1	20.3	24.1
2016/17	1,374	555	134	3,831	5,894
Rate per 1,000 people with diabetes	29.6	14.3	7.6	18.9	22.7
2017/18	1,423	704	166	3,980	6,273
Rate per 1,000 people with diabetes	29.4	17.5	8.9	19.5	23.6

Notes: Discharges had a primary diagnosis of diabetes mellitus.

As of 1 July 2014 diabetes mellitus did not need to be sequenced as the primary diagnosis. This resulted in a notable decrease in recorded hospitalisations between 2013/14 and 2014/15. Due to this administrative trend, hospital discharges are shown by financial year, but the VDR population data used to calculate rates is only available by calendar year. The VDR year to produce rates is shown for each financial year in the table above. This includes people who were alive the January before the financial year began.

Source: NMDS, (VDR) Dec 2010–2017 (v686)





2<sup>nd</sup> May 2016

## Diabetes Workshop – Summary Report



Prepared by:  
Health Navigator Charitable Trust



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## 1. Background

A one-day Diabetes Workshop was held on Monday 2<sup>nd</sup> May 2016 in Rotorua by the Ministry of Health with organisational support provided by Health Navigator Charitable Trust.

The main purpose of this workshop was to bring DHB and PHO funders, planners and clinical leaders together, to hear from national experts involved in recent guideline development and move towards improved consistency in the purchase and provision of diabetes services across the country.

In support of this purpose the workshop aimed to:

- Bring diverse groups of DHB/PHO management and clinicians together
- Discuss a number of resources, guidelines and supporting frameworks that have recently been developed
- Provide advice to assist with the annual planning process
- View and discuss variance reports about current service provision
- Discuss the barriers and enablers for optimising care and health outcomes for diabetes services

## 2. Evaluation process

An evaluation questionnaire was provided to workshop participants with 59 received at the end of the day as hard copies.

- A total of **59 responses were received giving a response rate of 69%** (if 85 is used as the denominator since the Health Navigator team and Ministry of Health staff were excluded from responding).
- The software programme used to capture responses and analyse the data is QuestionPro, an internationally recognized and popular online survey system.

## 3. Workshop Attendees

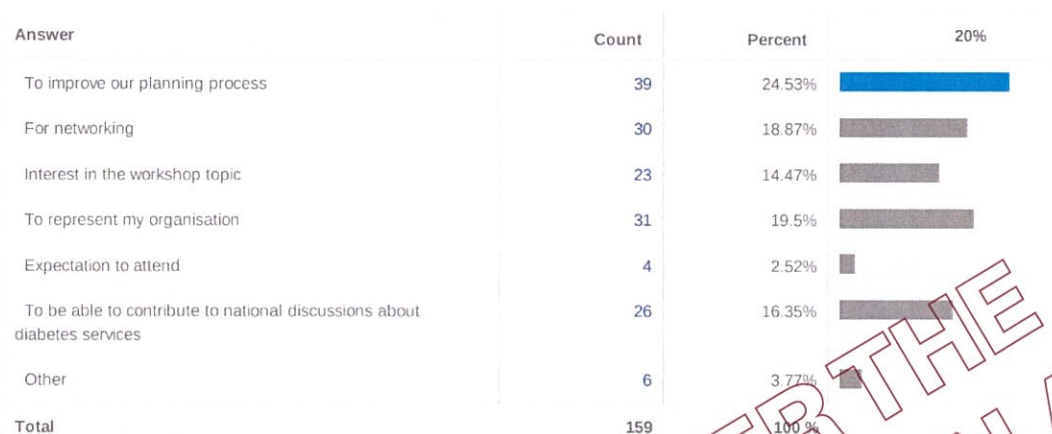
The intended audience for this workshop was 3 to 4 decision-makers for each DHB region aiming for a total group of approximately 100 participants such as:

- DHB planning and funding staff,
- PHO senior managers and CEOs,
- Clinical leads from primary and secondary care for diabetes services.

The total number registered was 95 people with 90 attending. Reasons for attending are shown in the figure below with participants able to select multiple options:



Figure 1: Reasons for attending this workshop



For other, reasons given were:

- clarity around MoH position, expectation for future delivery of Diabetes service
- invited as consumer
- to better understand national direction and CQI initiatives
- to find out what others are doing and share their successes.
- learning from other national projects
- Taken on new role as Clinical Director. Improve services Northland

#### 4. Workshop organisation, venue, facilitator, presentations and group discussions

The following table shows the average scores (with 5 being very satisfactory) for workshop organisation, organisation on the day, facilitator style and approach, value of the presentations and value of the group discussion sessions.

Question	Count	Score	Very Unsatisfied	Unsatisfied	Neutral	Satisfied	Very Satisfied
Workshop organisation (registration process, pre-reading)	58	4.07					
Organisation on the day	58	4.24					
Facilitators style and approach	58	4.24					
Value of the presentations to you or your organisation	59	4.12					
Overall value of group discussion sessions	59	4.05					
<b>Average</b>		<b>4.14</b>					

For this table, 2 people ticked very unsatisfactory for all 5 responses yet there were no negative comments anywhere else on their forms and their overall satisfaction with the day was ticked as very satisfied or somewhat satisfied. Their results have been included however such responses would suggest they may have ticked very unsatisfactory in error.

#### Workshop venue, timing & location:

- One person commented that the *"Venue very cold on left hand side of the room"*
- Rotorua was seen at difficult to get to by a number of respondents *"a challenge to get to Rotorua. Up at 4.30am, home after 8.30pm"*



- *"Needs to be at easily accessible city - I had to get up at 5am to make flights and was still late and had to leave early."*
- *"Programme needs to consider flight availability. If finishing earlier, most could have caught last flight out tonight."*
- *"Please have these meetings in more accessible locations. Rotorua difficult and expensive."*
- *"the Ministry of Health workshop - is vital I ? the location of Rotorua or Tauranga because it is central NZ, would like to see it run over two days instead of one."*

#### **Workshop organisation (registration process)**

- 83% or respondents were very satisfied or satisfied.
- *"Notification of workshop would have been better earlier."*
- *"Please don't keep sending invite tickets 4 times."*

#### **Organisation on the day**

- 95% or respondents were very satisfied or satisfied.
- One person commented that *"the site registration not straight forward"*

#### **Facilitator style and approach**

- Facilitator for the day was Dr Janine Bycroft from Health Navigator. An advantage was being able to link conversation and presentations to various activities, programmes and events happening around the country.
- 95% or respondents were very satisfied or satisfied.

#### **Value of the presentations to you or your organisation**

- 92% or respondents were very satisfied or satisfied.
- *"Morning worked well - not so interested in the afternoon"*

#### **Overall value of the group discussion sessions**

- 85% or respondents were very satisfied or satisfied.
- It is always a challenge to get the right balance between group discussions, group feedback and presentations.
- *"Some of the information read today was just read from the MoH so no real discussion"*
- *"More group work and discussion would have broken up the day and encouraged more national sharing."*

## **5. Learnings and district collaboration**

When asked, *"Will learnings from this workshop encourage greater collaboration between stakeholders in your district/region on diabetes integration planning?"*

- 81.5% answered Yes or Possibly, (this is comparable with the 82% reported for the Diabetes Workshop from 2014)
- Two people chose No (3.7%) chose No, and
- Eight participants (14.8%) said they are already doing this well.





## 6. Patient participation in service planning

Question: "Having attended the workshop, do you feel any changes or additions are needed to how your organisation involves patients in diabetes service planning?"

- More attendees were positive about including patients in service planning compared to the diabetes workshop in 2014. (88.8% this year compared to 81.2% in 2014)
- 60.4% responded 'Yes' (up from 45.4% in 2014)
- 28.3% responded 'Maybe' (down from 35.4%)
- 11.3% selected 'No' (down from 18.75% in 2014)



Question 6: Having attended the workshop do you feel any changes are needed to how your organisation involves patients in diabetes service planning?

## 7. Proposed planning changes for 2016-17

To help gauge what proposed planning changes the workshop may have stimulated, participants were asked, "Following this workshop, what will you do differently in your planning for 2016-17?"

The following free text responses were received with themes appearing in relation to:

- stocktake and quality gaps; use of data; funding; annual planning, workforce; prediabetes; diabetes self-management education (DSME), retinal screening services.

- Increased consultation with all stakeholders
- Focus on key areas
- voice - keep it out there: consumer voice
- Link Diabetes into LTC Service specifications when see the new version/integration
- Stronger links with Diabetes NZ. Local person vice president
- "Considerations for further co-design
- Review information available from other PHOs
- Reconvene DHB SLAT (data focus)
- Pull together Diabetes working group within LTC Alliance network
- Utilising stats, take one or two areas of need and implement an action plan to address these. Do this well and effectively.



- Without increase in resource and workforce - hard to see what can be done differently
- Add 'personal stories' to encourage/promote people to value their health.
- Look at how reporting back to general practice"
- Look at the new MOH LTC toolkit.
- Look at making improvements in service gaps that have been identified.
- Review nursing resource and try to arrange resources to get best bang for bucks.
- Locality planning.
- try to get greater visibility on what others are doing so we don't replicate services

#### **Annual planning & funding**

- This workshop should be held earlier in the year to align with annual planning cycle. Annual plan are in draft currently
- Is this too late to include this work for 16/17 - most DHBs have done planning
- Annual planning already completed. However knowledge will inform work of ? Group going forward.
- diabetes audit day = make info available wider and share across region and needs to inform annual plan.
- Set up strategic plan to try and cover the obvious gaps we have
- Review how our funding can be re-prioritised to target high needs
- Upstream investment
- Not able to comment as require funding to change. Already done too late to comment eg prediabetes)
- Suggest/allocate funds to target high risk patients and provide resources to facilitate this
- Reassess how we can offer services under each contract - what flexibility is there.

#### **Stocktake and quality gaps**

- Use good analytics to identify gaps and focus on improving. Keep on doing what we are doing.
- Measure progress against the standard
- Better organise our stocktake
- Look at 'gaps' in our service provision and how best to address these (stocktake)
- Stocktake
- Add gaps from the Quality Standards stocktake into the Diabetes Workplan
- Look at the MoH data and include in our GAP analysis against the 20 diabetes standards
- pursue the need for DHB stocktake against MOH quality diabetes standards. Ensure the HQSC data is utilized as part of planning
- Critical appraisal of data and determination of gaps
- look more closely at data collection

#### **Prediabetes**

- Focus on pre-diabetes
- Focus work on pre-diabetes
- Look at pre-diabetes self-management program
- consider testing for urine microalbuminaemia in prediabetes
- Include focus on improving communication of simple message for patients & pre-diabetes reversing workshop as per Nelson case study.
- Relook at health promotion activities in relation to pre-diabetes
- expand our pre diabetes program, more consumer input
- pre diabetes information
- I will look at prediabetes
- Focus group prediabetes and plan for prediabetes model of care service dev?

#### **DSME**

- Set up 5-M working party to discuss how we can increase facilitators for Diabetes specific self-management groups
- Connect with Hutt valley PHO re: SME
- Want more willingness from DHB to refer to DSME assist PHO to meet contracts.

#### **Retinal screening services**

- Retinopathy screening service - need to develop a better model for patients
- work on shift capacity retinal screening to community
- Review service specifications of current contracts and align with changed LTC specifications - Quality standards and Retinal Screening Guidelines.
- Change retinal screening contracts.

#### **Workforce**

- ask Te Awakairangi about their diabetes nurse training pathway,
- Put more into workforce planning/ education
- Continue nurse led specialist clinics in primary care
- Promoting role of nurse champion in each practice - nurse champions tend to drive diabetes care for practice in my experience
- Work more closely with regional diabetes service to address workforce gaps.

## **8. Further actions planned post workshop**

The workshop seemed to stimulate thinking and planning with many people filling in the free text option listing actions planned following the workshop. Some of the responses were difficult to read and when unclear, are shown by question marks.

The exact question was: "Please list 2 or 3 actions you plan to undertake following this workshop?"

- Spread the information provided
- Better organise our stocktake
- Look to focus on easy wins from stocktake results
- Review standards stocktake. Look at pre-diabetes - what are we doing?
- Consider focus on feet, kidney and eye health in line with stocktake of standards, provider and consumer feedback
- Data focus at a local level
- Commit to '20' QA standards"
- Nursing education updates
- Gap analysis
- Meeting with our local Whana Ora
- Look at pre-diabetes sessions out of hours
- Revisit our planned strategic local plan
- Organise visit for clinical team/practice support members to Nelson
- Work with regional diabetes service to support providers to strengthen workforce confidence in insulin stats and management"
- work closely with ALT and DHB + diabetes specialist teams. Pre diabetes program
- Continue with current focus of insulin initiation in primary care. This is my role for 1 year
- Greater analysis of HBA1C - type 1 and 2
- Link gestational diabetes with child milestones

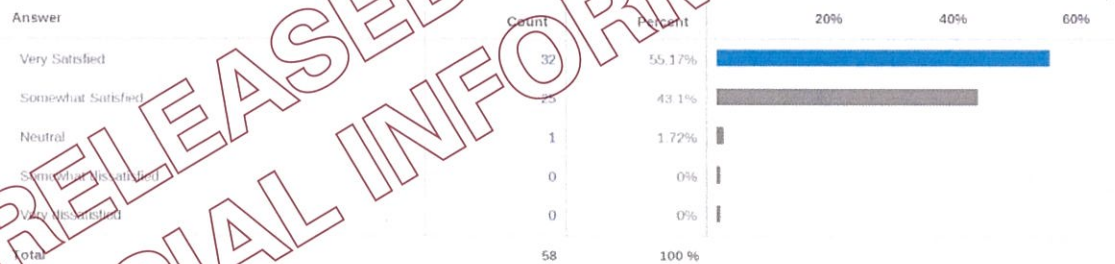


- Use labs bulletin
- Collect better data
- Stocktake of workforce"
- Look at stocktake data again
- Get a better understanding of our local data and how we need to re-design our system utilising this data
- Refocus operational/strategic groups
- Review ? Actions or outcomes?
- Stocktake
- Contemplate, discuss create action plan, stocktake
- Discuss re: best practice DAR form & add referral for DSME as part of action plan
- Discuss retinal screening pack and add referral to DSME as part of guidance document
- Complete stocktake report and service manager
- check out retinal screening in pregnancy for type 1 and 2 diabetes
- Review data - all ?patients with bed days
- Stocktake to be completed
- Do more sponsored practice mailouts ( to engage consumers in DSME group courses )
- NHI linking
- Follow up on existing programmes that are working well. Investigate how they would fit in our region
- Pursue diabetes HbA1c measures to NHI level
- Pursue data management to show outcomes
- Patient education - formalise plan
- Meet back with PHA team to feedback, do AP plan and actions.
- GPs data collation
- Scan the guidelines for reconciling ACR checks, strategy to tighten up data and improve
- Standards review, review annual plan
- Complete an audit against the Quality Standards
- Implement the retinal screening guidelines
- Enhanced SM support ( including options for pre-diabetes )
- stocktake of services
- Lobby for extra staff. Not undertake extra work without it already part of northern regional network/local diabetes SLAT
- Want to have more investment in staff development
- connect with ?
- data collections, linkages with community, more case studies
- Set up meeting between DHB and PHO to work on plan
- set up meeting with DBH and PHO to work on plan
- look more at how best to support high needs in practices
- standardize data collection across region , establish diabetes and pre diabetes register. Workforce development pathway
- DAR information checks;
- Appropriate referrals;
- Plan ways to promote DSME"
- 1) stocktake & analyse, 2) Then identify gaps,3) Pilot to improve prediabetes care
- 1)Need programme as per point 1, 2) coding issues need sorting
- 1) Coding for prediabetes, 2) inpatient dedicated team
- ?Re-evaluate current type 2 classes and review prediabetes class
- Consider ability to provide specialist care more widely to primary care
- Depends on what final plan is.
- Consider how to hold pre-diabetes workshops for patients.

- 1: 1 SME
- 1) Carry on with SLAT (workplan), 2) complete stocktake.
- Meeting and debriefing with managers and portfolio managers.
- Looking at strategies to improve rates and data from VDR.
- Advising and stocktaking diabetes in our DHB.
- Review our draft diabetes workplan for 2016
- Find out if annual checks are happening for PI community clinic attendees.
- Do pre-diabetes education in PI community.
- Get together an all PHO diabetes SLAT
- No SLAT without data
- Virtual care - compliant patients. reallocation to Maori & Pacifica.
- Change contracts connect with Hutt Valley PHO. Share learnings.
- Feed back to team. Do our due diligence before implementing new services. Look up Desmond course.
- Discuss with ophthalmology dept. Follow up work already undertaken on the diabetes standard toolkit.

## 9. Overall satisfaction

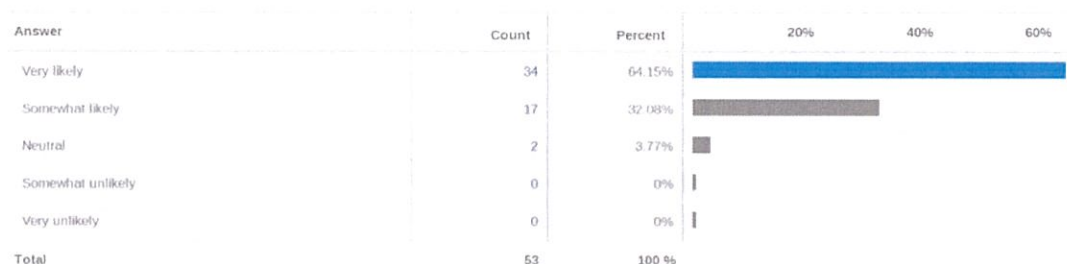
Overall satisfaction was high with 98% responding as very satisfied or somewhat satisfied when asked, "What is your overall level of satisfaction with the workshop?" This compares favourably with a figure of 88.8% in 2014)



## 10. Interest in future workshops

When asked, "Do you think further Ministry of Health workshops would assist DHBs/PHOs to continue to improve their diabetes planning and delivery?" The majority were in favour with a total of 96% responding as very likely or somewhat likely.

- 64.15% responded very likely (up from 47.8% in 2014)
- 39.1% responded somewhat likely



If yes, who should the target audience be and what topics would you recommend covering?



**Many thought current audience was appropriate**

- Target group invited was appropriate
- As today
- Same audience as today
- Same target audience
- I think that the audience is relevant who ever attends. Different perspectives add to the conversation
- Target audience - who is interested - if there is a passion they will learn
- Same audience, but ensure all planning and funding teams attend.
- Same as today re audience.

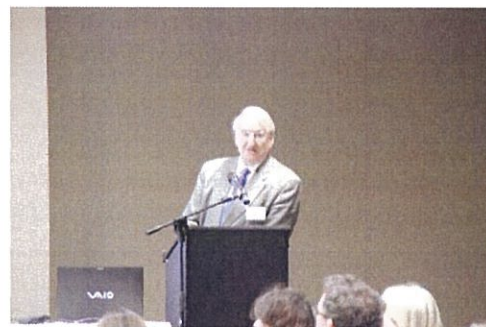
**If yes, who should the target audience be and what topics would you recommend covering?**

- Senior Managers & decision - makers
- a cross section of the community including community representatives/DHB/PHO/other agencies
- GPs
- Could include consumers
- DHBs, PHOs, clinicians, consumers
- Leaders DHBs, PHOs
- Clinical teams
- PHOs, DHBs, MoH
- Practice support facilitators
- funders, practice managers
- DNS
- Same but also invite GP champions
- NGOs
- Bring in LMCs
- General practice teams

**Comments included:**

- Funding for diabetes for some small contract provision to help them maintain viability and sustainability
- Regional groupings where this isn't already happening with MoH able to provide information from other regions
- Refine workshops as per feedback
- DSME and preventing diabetes
- Need to get clinical leadership from other professionals involved in diabetes care
- Need to replicate the workshops on a local level
- A workshop day on obesity target - cross sectoral - diabetes, oral health, child health, education, health sectors
- Data - national level
- Case presentations from different areas
- Reduce variation in templates
- Standardisation of expectation of reporting
- Self management
- Integration"
- innovative idea sharing
- Research and outcomes
- How to do effective research
- examples in relation to diabetes
- Services outside of general practice

- Gestational diabetes management
- Reducing incidence amputations
- Relevant and appropriate sectors invited.
- MoH provided a global view, was great.
- Stats provided a picture of national activity
- more focus on integration and locality work
- Useful to have enough notice so area is better represented
- None of the stakeholders from our area attended
- Good sessions today
- Would have been good to have Practice Nurses CE from PHO here
- it is imperative to have managers and fund holders ?pressure as well as clinical staff
- DHB planners and funders motivated by cost savings. What low cost interventions (prevention) can cost 'v' complication
- Managers - look for gaps and ways to close these.
- Present QI initiatives.
- Update on ARI etc.
- Those DHBs/PHO that are seen to be most in need, topics addressing collaboration improvement and data gathering identifying and putting in some action plans.
- monitoring performance especially equity and quality standards. Workforce capacity for services required.
- Link with childhood obesity targets.
- Invite Project Energize to attend next workshop and other sport Trusts.
- Involve philanthropy "
- Service deliverers. Training on standard DSME programmes
- Great to hold annually to review progress on what was presented today and alignment with diabetes strategy
- What support is available from ministry to influence allocators of funds to meeting minimum standards of diabetes care



## 11. Any other Comments

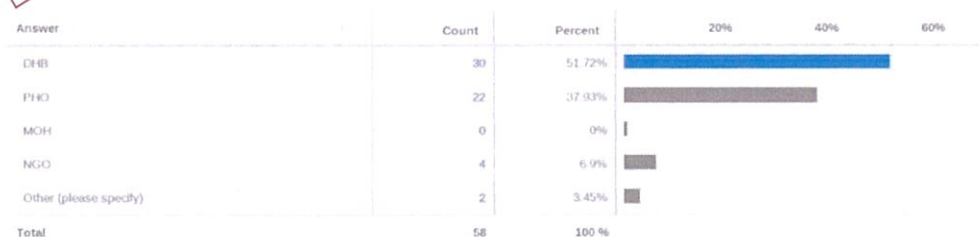
- Focusing into actions is a great way to brain storm and generate ideas
- Thank you for inviting me
- How does all this link with the pharmacy action plan and Medicines NZ so that there is better use of pharmacy care workforce?



- Too much focus on PHOs and GP teams which excludes other important aspects of primary care
- Co-design is a key but how do you remunerate consumers - no funding to allow for this
- Workshops can assist DHBs/PHOs to continue to improve if there is out of the box sustainable funding.
- Would be good to have information on how to apply the HEAT tool to Maori Diabetes.
- I feel that the data was slightly misleading. Would be good to have definitions of den/nom.
- That the MoH identify sustainable strategies across the board as a benchmark. From this DHBs/PHOs can work in their regions. The benchmark provides consistency ( eg. pre-diabetes pilots, funding ceased )
- "Qu. 10: Consider good sharing of information by Ministry outside of these annual workshops.
- Site registration not straight forward.
- Would have been better received if for DHB that didn't have data had been given a heads up prior to seminar. Is disheartening as we know from PHO and DHB level data has been sent.
- bariatric pathways need to be funded sustainably to include non-surgical aspects or bariatric care
- Thanks for the lovely food :)
- A valuable day- thank you

## 12. Organisations represented

When asked to indicate what organisations participants represented, the following ratios were obtained.



Please indicate the organisations you work for (select all that apply): - Text Data for Other (please specify)

05/07/2016	19297119	Maketu health and social society
05/07/2016	19297027	private contractor

## Conclusion

Overall satisfaction with this Diabetes Workshop was very high with 98% responding as very satisfied or somewhat satisfied with the day and the majority of comments were positive and constructive. Many participants appeared to be well engaged and energized by the day with an impressive list of action points and changes to diabetes service planning listed.

To assist with workshop planning and allowing sufficient lead time to reach the right audience, a longer lead time for programme development and communication would be helpful. While some people liked the workshop being before the NZSSD conference, others found the location difficult to reach and it may be useful to rotate the venue between the largest centres to give more people an opportunity to attend and reduce travel distances from the regions.

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